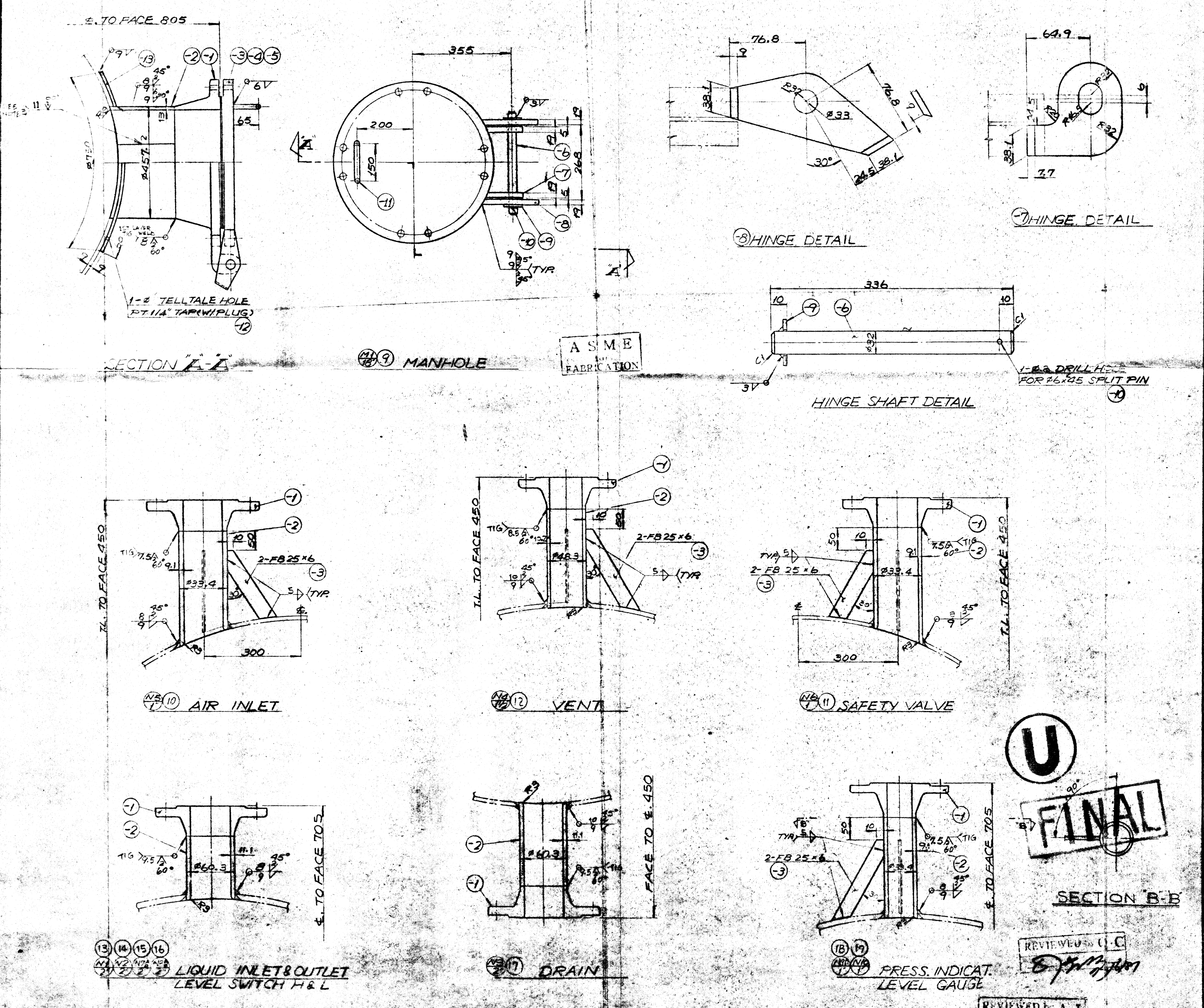
DWG. NO. GD-21-



A S M E FABRICATION

U

FINAL

REVIEWED Q.C

REVIEWED by A.I

NOTES

1. WELDING PROCEDURE QUALIFICATION TEST & WELD'S PERFORMANCE QUALIFICATION TEST SHELL BE IN ACCORDANCE WITH ASME SEC VIII DIV 1 & IX.
2. BOLT HOLES OF ALL FLANGES SHALL BE STRADDLED THE CENTER LINE OF VESSEL.
3. NOZZLE NECK TO BE RADIOGRAPHED FULLY X-RAYED SECTIONS OF LONGI. SEAMS.
4. LENGTH OF STUD BOLT DOES NOT INCLUDE THE HEIGHT OF THE POINTS.

NO.	DESCRIPTION	MAT'L	Q'TY	SIZE	REMARKS
-3	GUSSET PL	A36	2	FB 25×6	
-2	NECK	A106-B	1	1"×SCH. XXStg.-149.7ℓ	
-1	FLANGE	A105	1	1"-ANSI #150 WN.RF	SCH. XX-Stg BORE
19	PRESS. INDICAT.		1SET		
18	LEVEL GAUGE		2SETS		
-2	NECK	A106-B	1	2"×SCH. XX-Stg-126ℓ	
-1	FLANGE	A105	1	2"-ANSI #150 WN.RF.	SCH. XX-Stg BORE
17	DRAIN		1SET		
-2	NECK	A106-B	1	2"×SCH. XX-Stg-133.4ℓ	
-1	FLANGE	A105	1	2"-ANSI #150 WN.RF.	SCH. XX-Stg BORE
16	LEVEL SWITCH L.		2SETS		
15	LEVEL SWITCH H.		2SETS		
14	LIQUID OUTLET		1SET		
13	LIQUID INLET		1SET		
-3	GUSSET PL	A36	2	FB 25×6	
-2	NECK	A106-B	1	1½"×SCH. XX-Stg-[illegible]ℓ	
-1	FLANGE	A105	1	1½"-ANSI #150 WN.RF.	[illegible]
12	VENT		1SET		
-3	GUSSET PL	A36	2	FB 25×6	
-2	NECK	A106-B	1	1"×SCH. XXStg.-333ℓ	
-1	FLANGE	A105	1	1"-ANSI #150 WN.RF.	SCH. XX-Stg BORE
11	SAFETY VALVE		1SET		
-3	GUSSET PL	A36	2	FB 25×6	
-2	NECK	A106-B	1	1"-SCH. XXStg.-333ℓ	
-1	FLANGE	A105	1	1"-ANSI #150 WN.RF.	SCH. XX-Stg BORE
10	AIR INLET		1SET		
-13	PAD	A516-55	1	PL.9×ø750	
-12	PLUG	A36	1	PT 1/4"	
-11	HANDLE	A36	1	R.8-16	
-10	SPLIT PIN	A36	1	ø6-ℓ45	
-9	WASHER	A283-C	4	PL.5×OD64×ID34	
-8	COVER HINGE	A283-C	2	PL.19	
-7	FLANGE HINGE	A283-C	2	PL.19	
-6	HINGE SHAFT	A36	1	ø32-ℓ336	
-5	STUD BOLT & NUT	A193-B7 A194-2H	16SETS	1⅛"-7UNC×155ℓ	SEE NOTE 4
-4	GASKET	ASBESTOS	1	t1.5×OD635×ID457.2	
-3	BLIND FLANGE	A105	1	18"-ANSI #150 BL.RF	
-2	NECK	A516-55	1	PL13×219.5×159.5ℓ	
-1	FLANGE	A105	1	18"-ANSI #150 WN.RF.	SCH. X-Stg BORE
9	MANHOLE		1SET		

MATERIAL LIST

NO.	DESCRIPTION	DATE	PR'D	CHK'D	APP'D
△					
△					
△					
△					
△0	ISSUED FOR APPROVAL	81.7		Y.K.SIN	

REVISIONS

CUSTOMER: DAELIM ENGINEERING CO., LTD

TITLE OF PROJECT: GULF OF SUEZ GAS PROJECT
RAS SHUKEIR. EGYPT

KHIC KOREA HEAVY INDUSTRIES & CONSTRUCTION CO., LTD.

	BY	DATE
APPROVED	D.K. Lee	81.7.16
CHECKED	Y.K. SHIN	81.7.15
DESIGNED		81.7.1
DRAWN		81.7.1

ITEM NO. 3-V14

NOZZLE DETAIL FOR
POTABLE WATER
SURGE DRUM

PRODUCTION ORDER NO.

SCALE: NTS

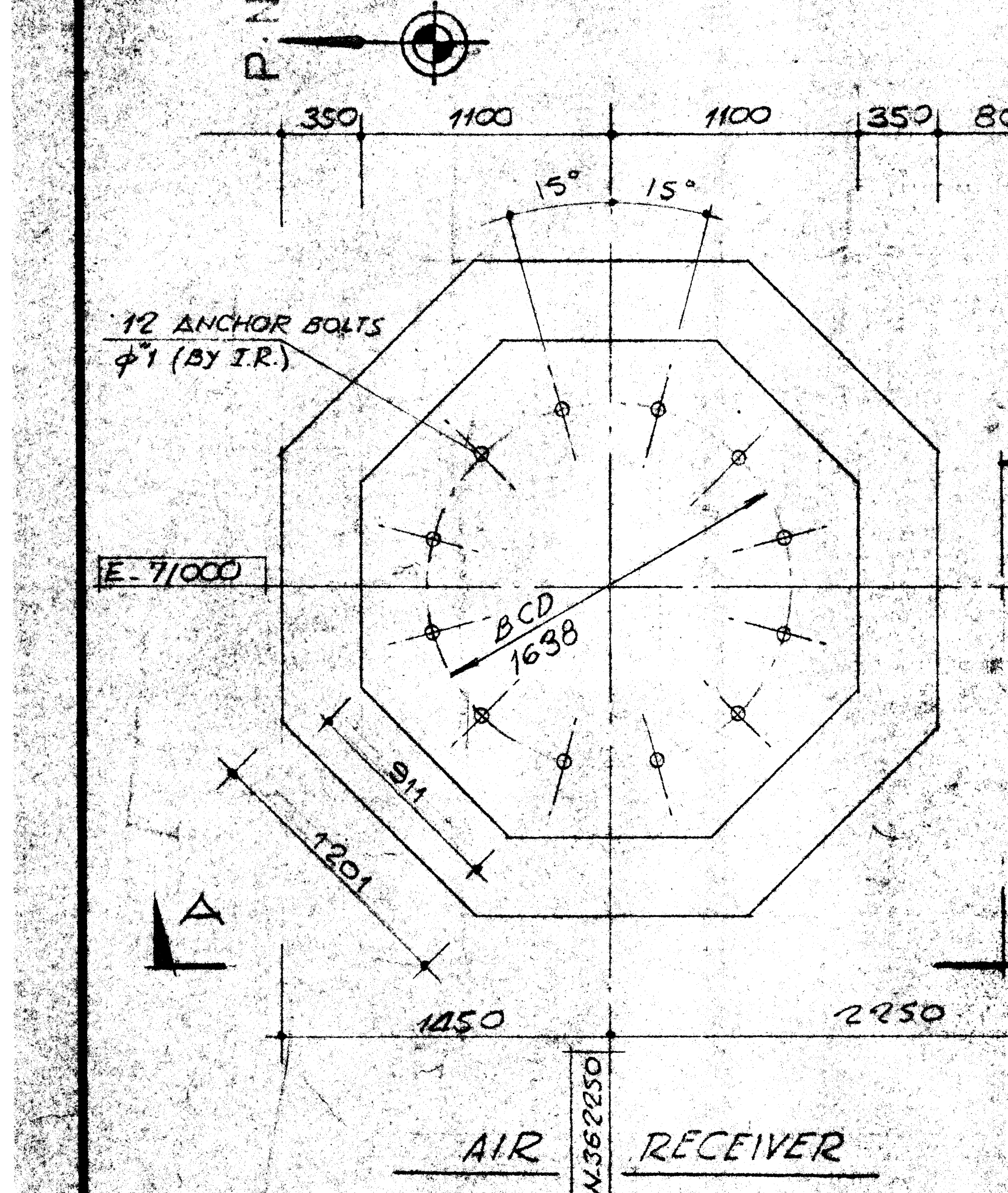
DWG. NO. GD-21-101-042-0

SHEET NO. 2/2

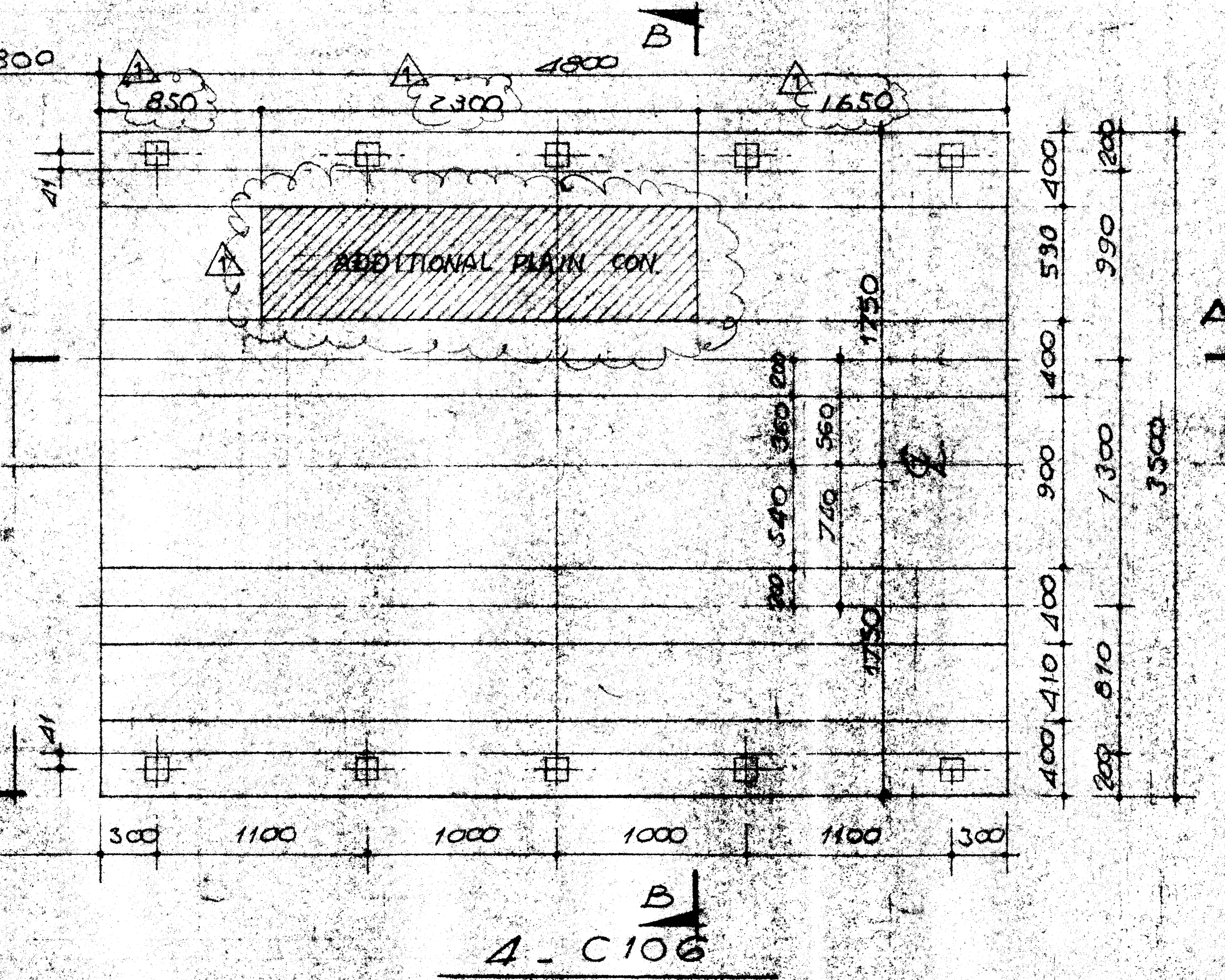
REV. △0

TYPE PC-A101

D 81.1 (SIZE 594 mm × 841 mm) A1

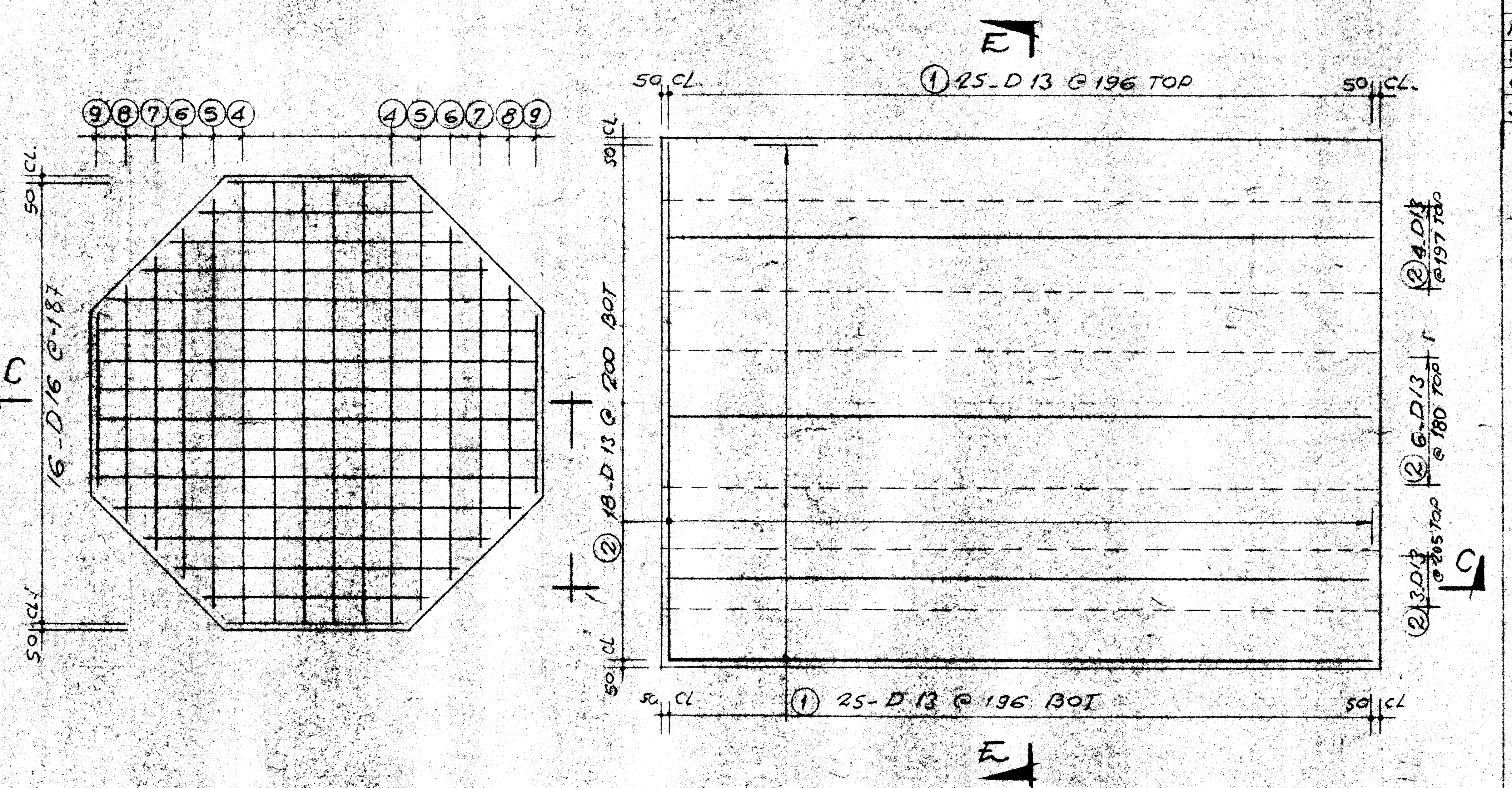


AIR RECEIVER



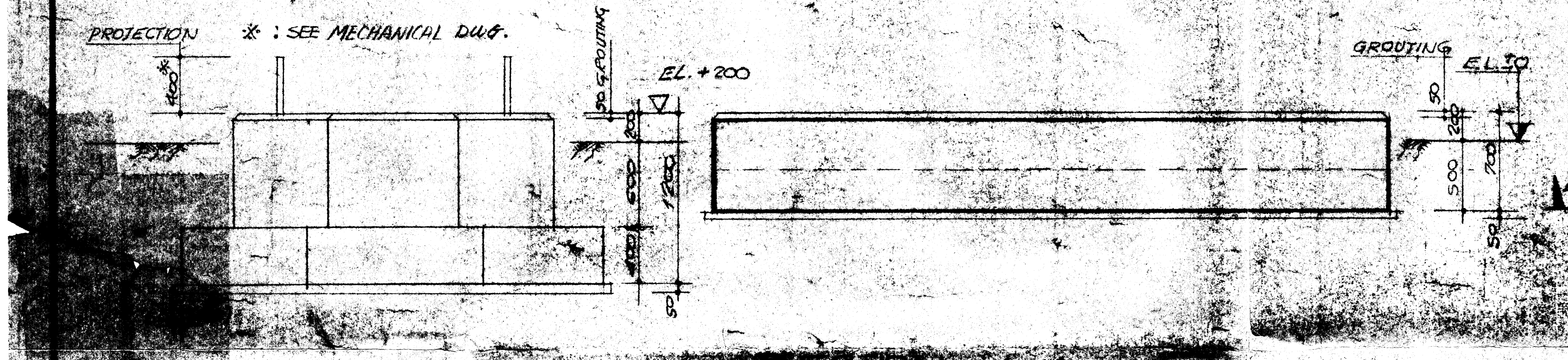
4_C106

FORMWORK PLAN

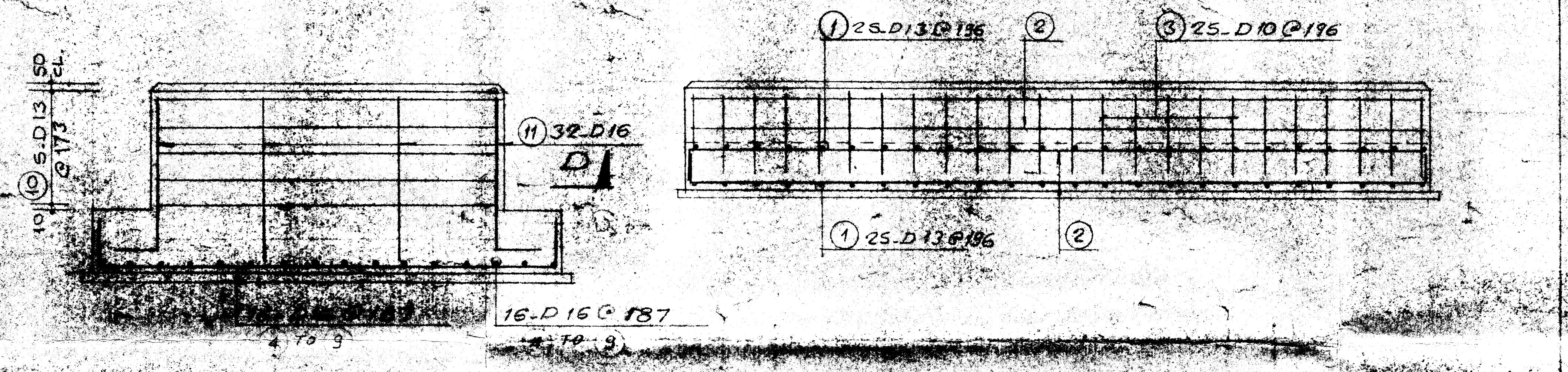


REINFORCEMENT PLAN

1/30

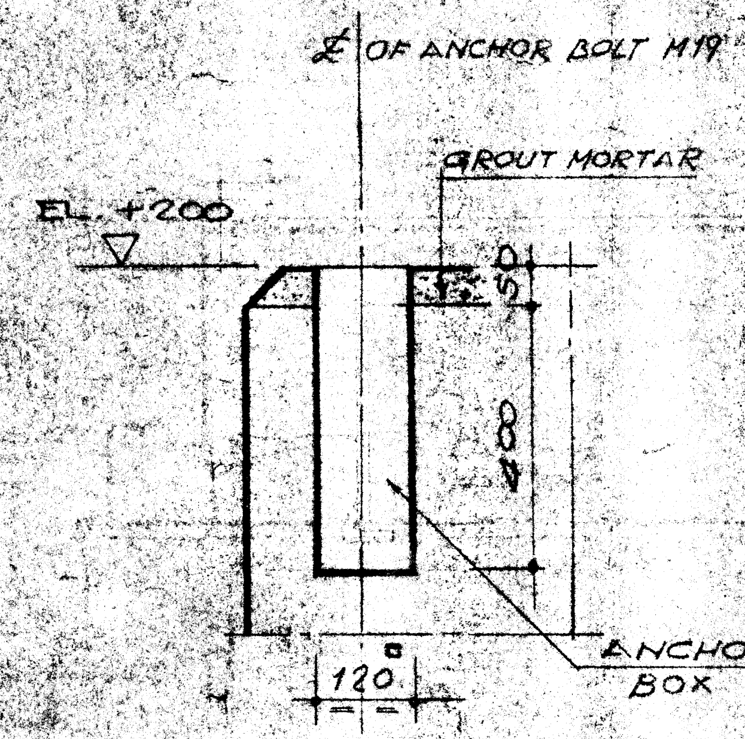


SECTION A-A

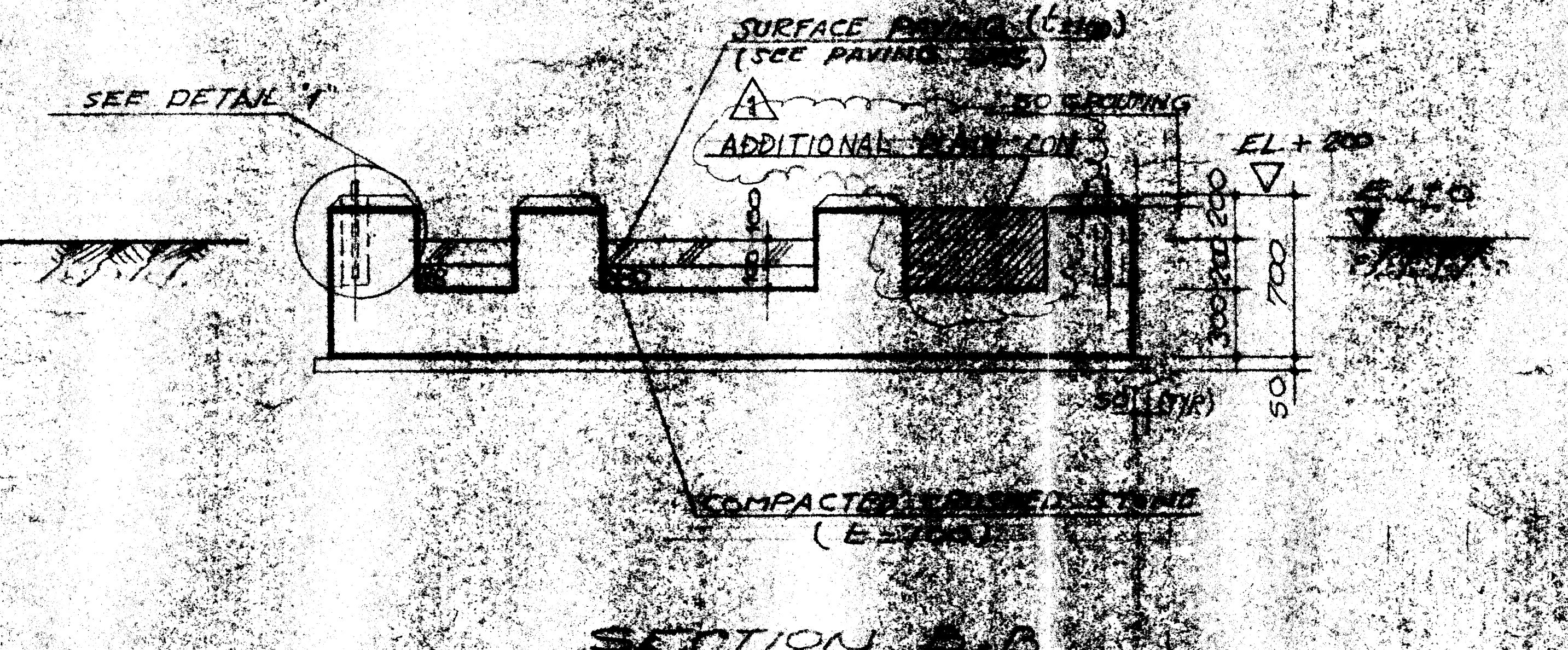


SECTION C-C

1/30

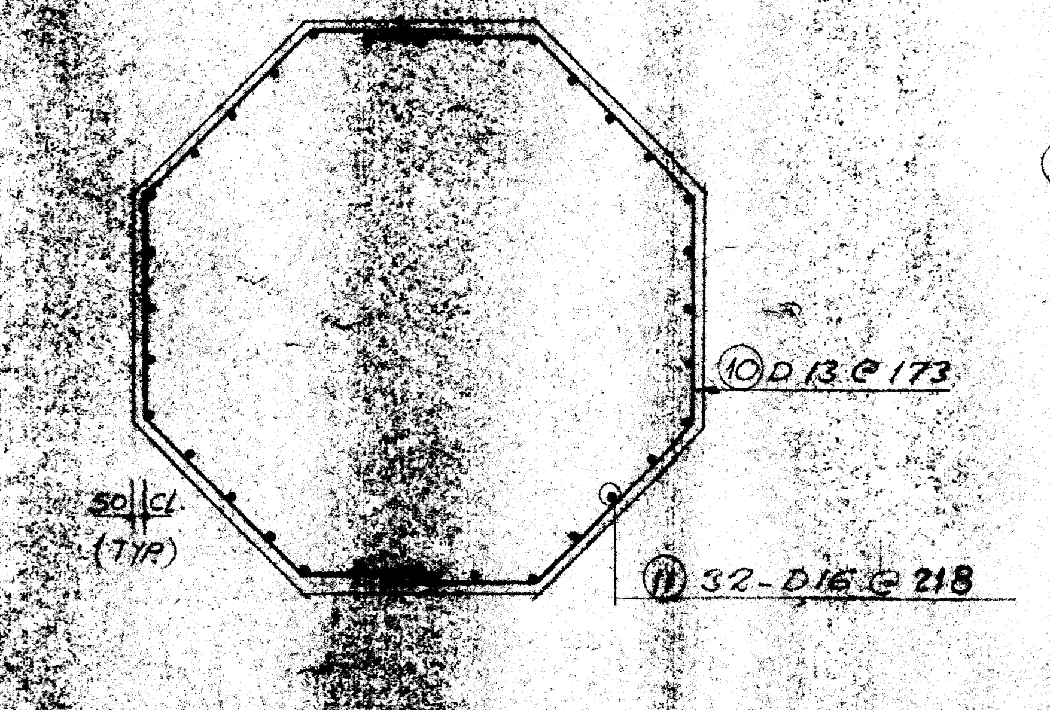


DETAIL 1



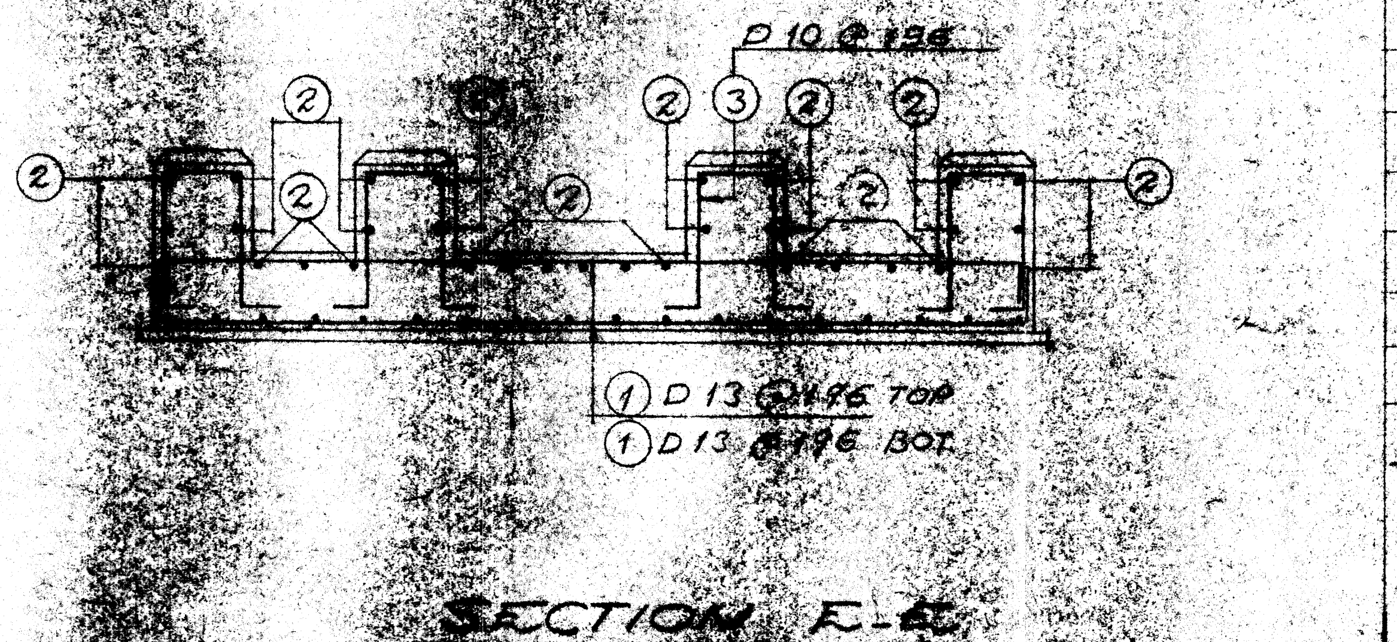
SECTION B-B

1/30



SECTION D-D

1/30



SECTION E-E

1/30

BAR BENDING SCHEDULE

ITEM	A	B	C	D	E	F	G		H
4C-106 COMPRESSOR UNIT	①	13	196	3800	50	1	50		200 3400 200
	②	13	SEE PLAN	5100	49	1	49		200 4700
	③	10	196	1740	100	1	100		[illegible]

ITEM	A	B	C	D	E	F	G		H
[illegible]	④	16	187	3400	12	1	12		300 2800 300
	⑤	16	—	3250	4	1	4		300 2650 300
	⑥	[illegible]	—	2875	4	1	4		300 2275 300
	⑦	[illegible]	—	2500	4	1	4		300 1900 300
	⑧	[illegible]	—	2125	4	1	4		300 1525 300
	⑨	16	—	1750	4	1	4		300 1150 300
	⑩	13	173	[illegible]	10	1	10		[illegible] 650
	⑪	[illegible]	218	[illegible]	32	1	32		300 [illegible]

REFERENCE DRAWINGS

NAME OF DRAWINGS	SHEET No.	RE
FOUND. LOCATION PLAN	GOS-AC-1400-53.011	
CONCRETE SPECS.	GOS-AC-20-006	
CONCRETE ACC.	GOS-AC-20-010	
SHIM & GROUTING	GOS-AC-20-007	

NOTE:
ALL DIMENSIONS ARE IN M.M

Eapp!
APPROVED
DATE

NOTES
A...MARK OF REINFORCEMENT.
B...DIAMETER OF REINFORCEMENT.
C...PITCH.
D...STRAIGHTENED LENGTH OF REINFORC
E...NUMBER OF REINFORCEMENT PER ELEM
F...NUMBER OF ELEMENT.
G...TOTAL NUMBER OF REINFORCEMENT
H...FIGURE.

LIST OF MATERIALS

DESCRIPTION	UNIT	QUANTITY	RE
REINFORCED CONC.	M 3	13.51	
LEVELLING CONC.	M 2	25.09	
FORMWORK	M 2	28.76	
EXCAVATION	M 3	17.58	
BACK FILLING	M 3	4.51	
BAR D-10	KG.	97.44	
BAR D-13	KG.	476.61	
BAR D-16	KG.	206.55	

ISSUE	DESCRIPTION	DATE	CHKD
4			
3			
2			
1	REVISED AS NOTED	AUG 31 '87	N.H.
0	ISSUED FOR APPROVAL	APRIL 2 86	Osuma

06[illegible]1401 EGPC

GULF OF SUEZ GAS PLANT PHASE

FOUNDATION DETAILS FO

4C106 & AIR RECEIVER (4X-1

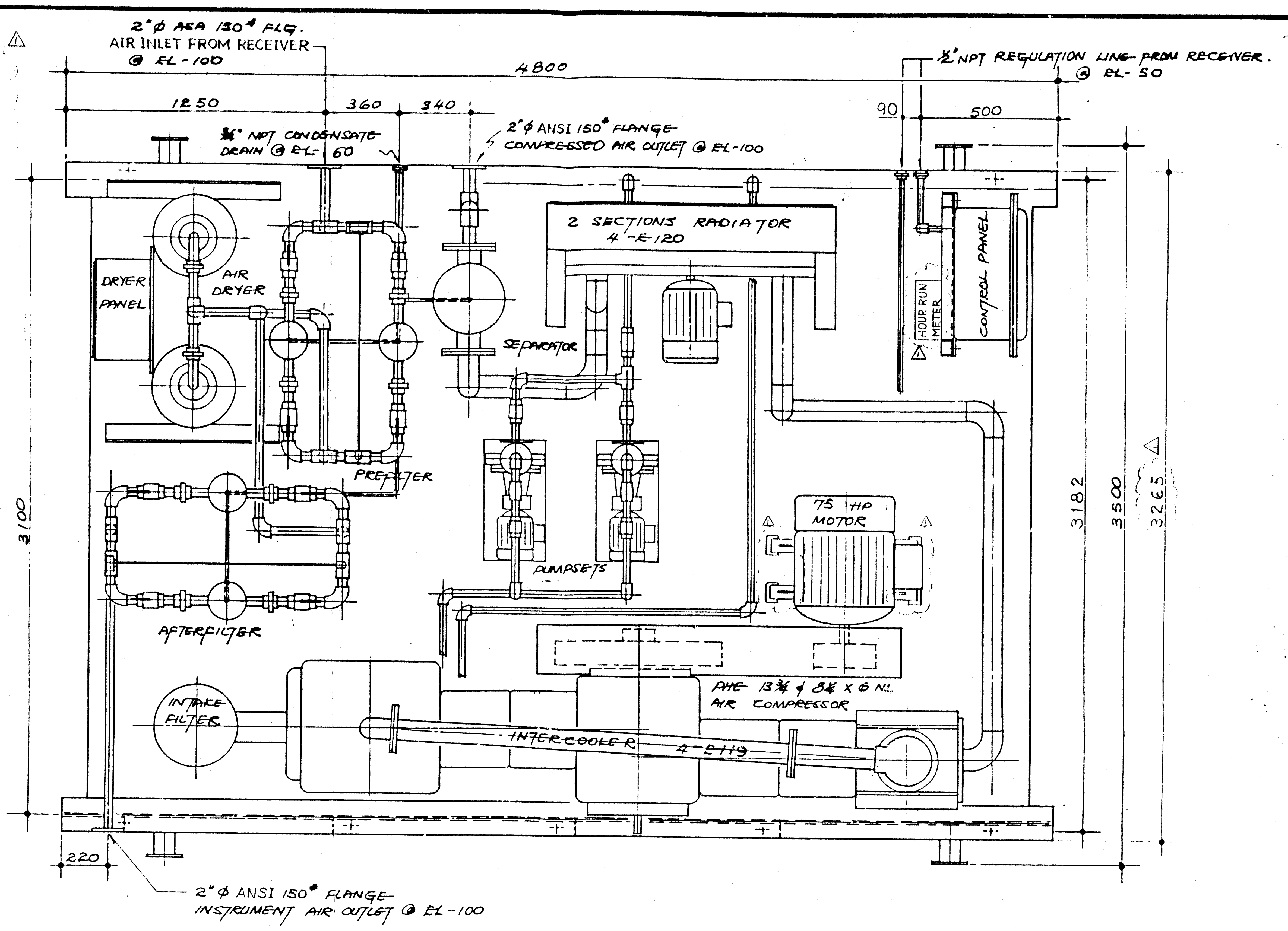
(SCALE) 1/3

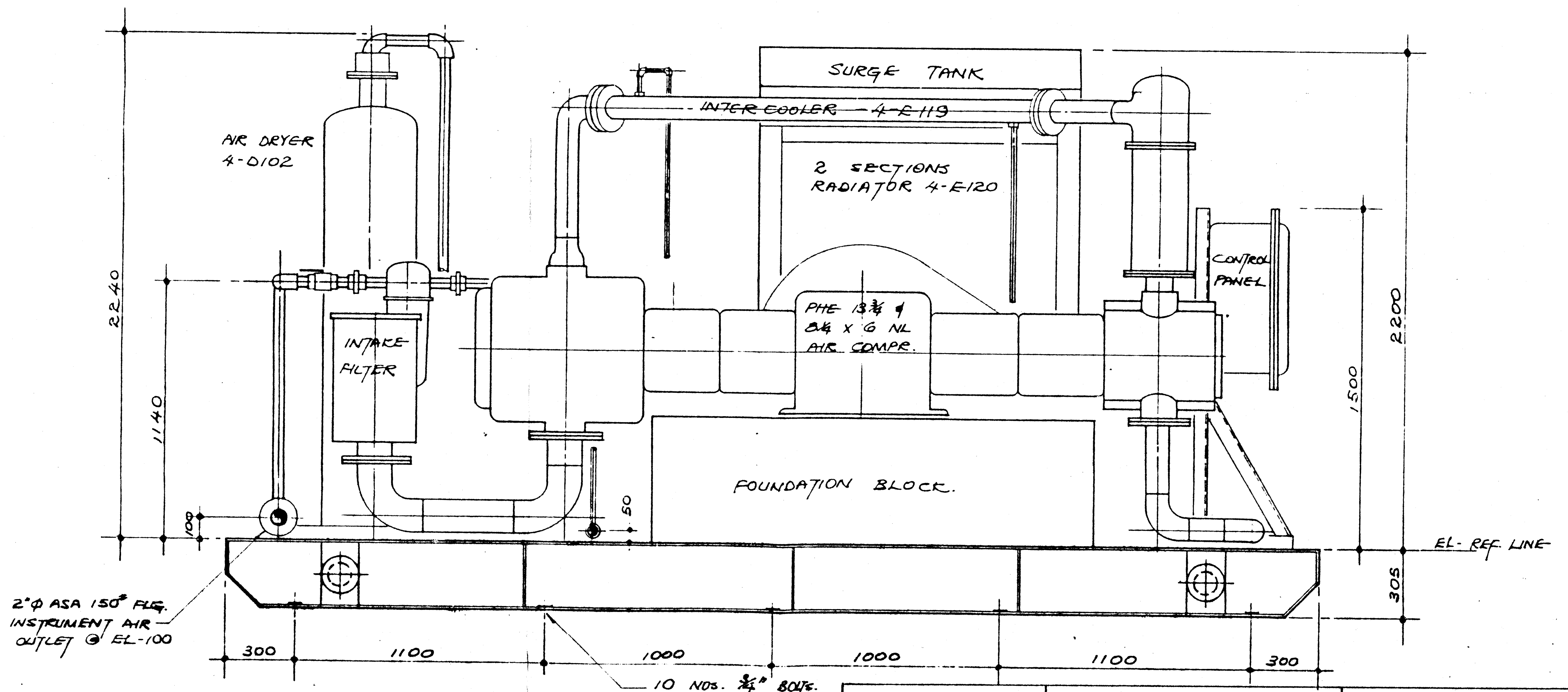
Hitachi Zosen
CIVIL ENGINEERING DEPARTMENT
OSAKA, JAPAN

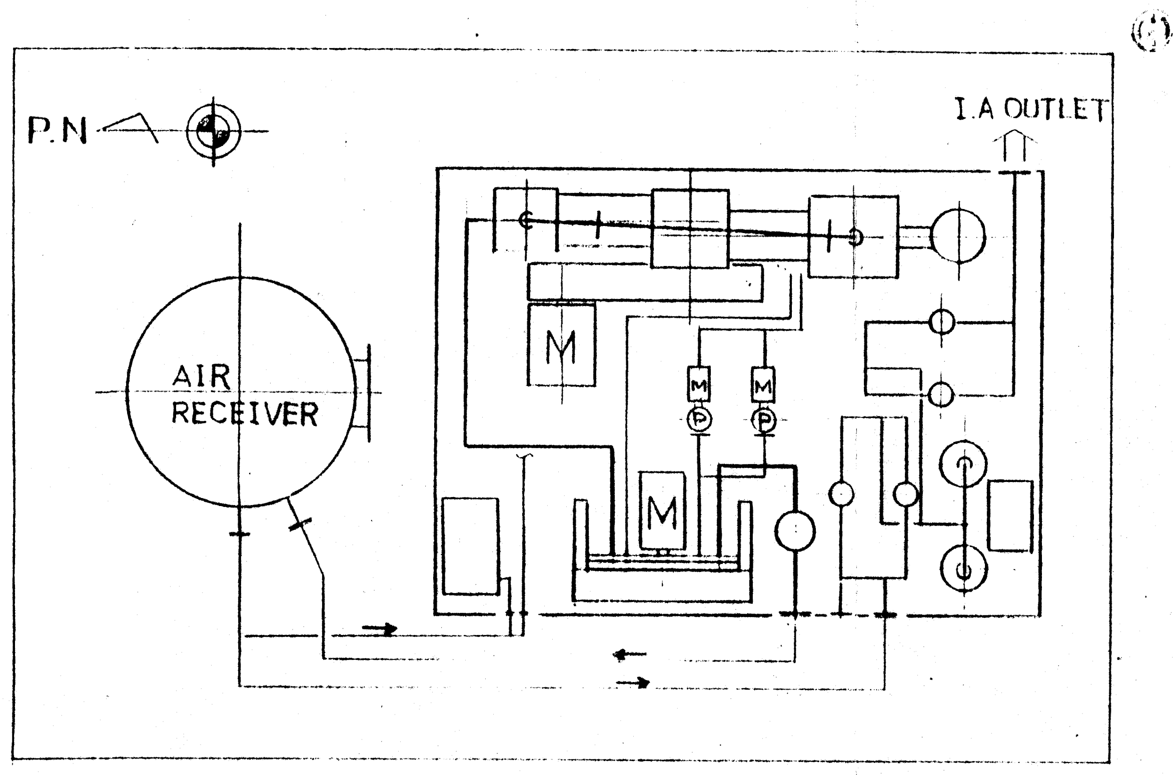
(DRAWN BY) SK
(CHECKED BY) Osum

DATE APR. 2/86
RELATED SECTION
DWG. No. 2465377
SHEET No. GOS-AC-1400-53

WEIGHT (kg)	
COMPRESSOR	2868
MOTOR	470
AFTERCOOLER	590
CONTROL PANEL	91
DRYER UNIT	995
PUMP 2sets	110
PRE & AFTERFILTER	24
SEPARATOR	68
PIPING	160
SKID	4800
OTHERS	136
TOTAL	10312


2"φ ASA 150# FLG.
AIR INLET FROM RECEIVER @ EL-100
4800
1250
360
340
3/4" NPT CONDENSATE DRAIN @ EL-60
2"φ ANSI 150# FLANGE COMPRESSED AIR OUTLET @ EL-100
1/2" NPT REGULATION LINE FROM RECEIVER @ EL-50
90
500
2 SECTIONS RADIATOR 4-E-120
DRYER PANEL
AIR DRYER
SEPARATOR
HOUR RUN METER
CONTROL PANEL
PREFILTER
PUMPSETS
75 HP MOTOR
AFTERFILTER
INTAKE FILTER
PHE 13 3/4 & 8 1/4 X 6 NL AIR COMPRESSOR
INTERCOOLER 4-E119
3100
3182
3500
3265
220
2"φ ANSI 150# FLANGE INSTRUMENT AIR OUTLET @ EL-100





REMARKS

Rev. 1 Issued for Construction

L. NO. 06291401 | OWNER EGPC

GOS-II 4-X105 ASSEMBLY DRAWING

CLASS UI, UNIT | SPEC NO. UI 40-001

DRWG NO. 3245252 △1

(DRAWN BY) K. Yanagihara

(CHECKED BY)

REVISION	DATE	DESCRIPTION	APPROVED
A	6-12-85	SUBMISSION FOR APPROVAL	

DESIGNED	DRAWN	CHECKED	EPS. DEPT. APPR	IR EQUIPT. REF

INGERSOLL-RAND

4C/06

Ingersoll-Rand South East Asia (Pte) Ltd
42, Benoi Road, Jurong Industrial Estate,
Singapore 2262. Tel: 654311
Mail: GPO Box 2062,
Telex. IRSPORE 21781

GENERAL ARRANGEMENT OF ONE UNIT PHE-2 13 3/4 & 8 1/4 X 6 NL-2 AIR COMPRESSOR PACKAGE

CUSTOMER | IR JAPAN (HITACHI-RAS SHUKHEIR)

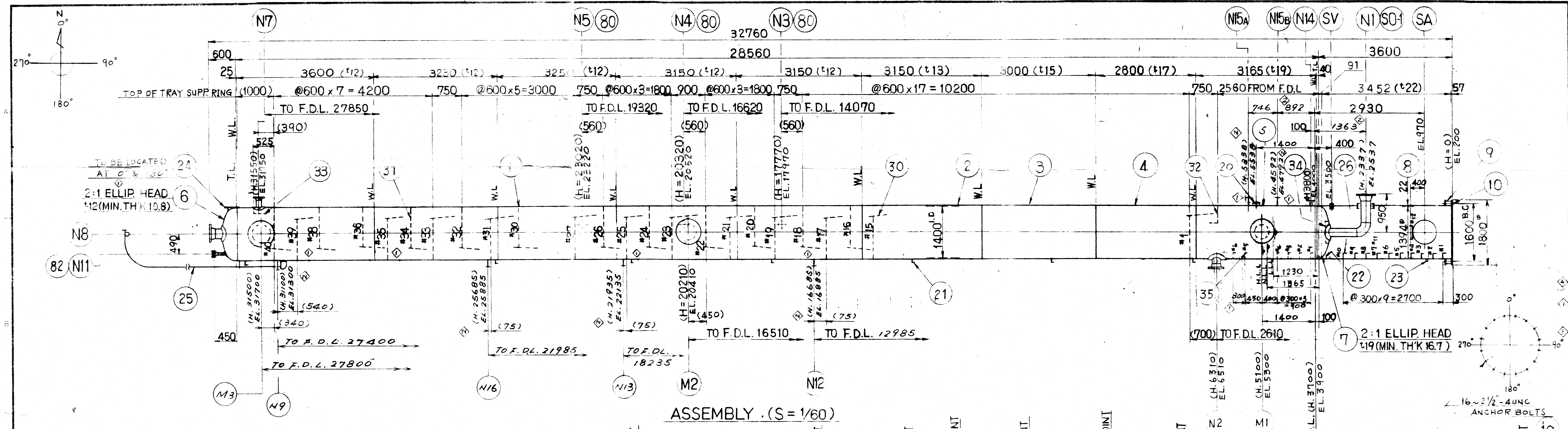
SCALE 1 : 20

DATE 4-12-85

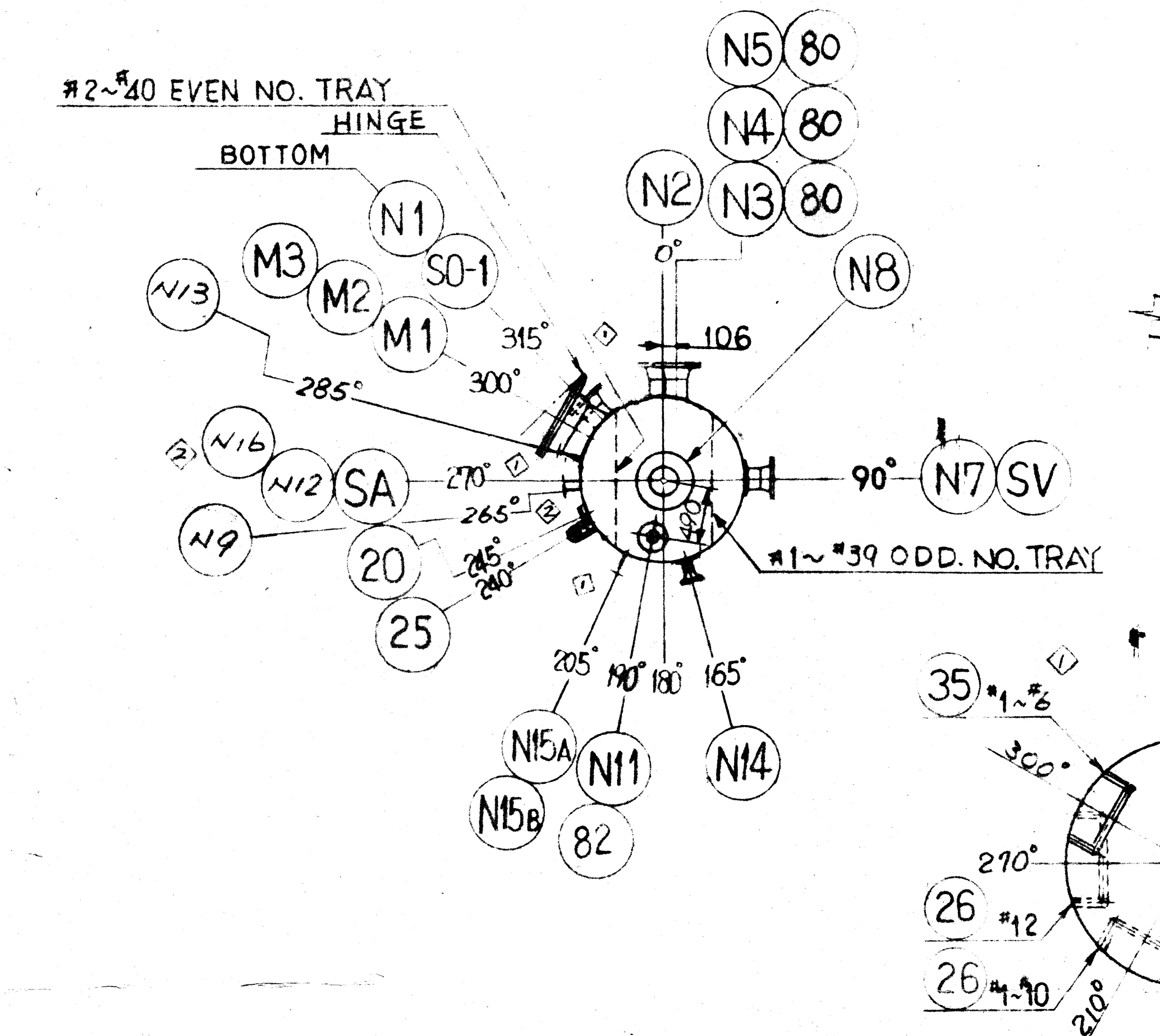
DRAWING NO E 2124

REVISION A

PROJECT NO: 1670

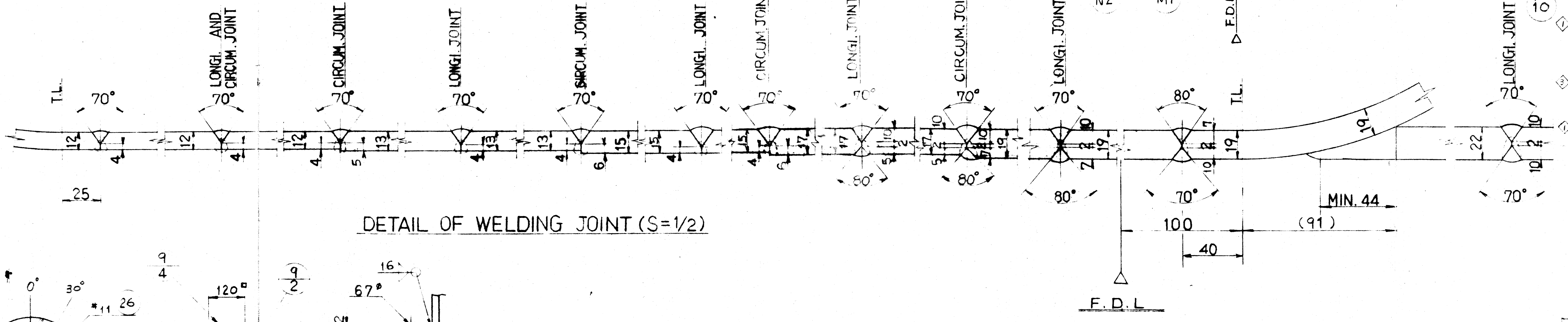


ASSEMBLY (S= 1/60)

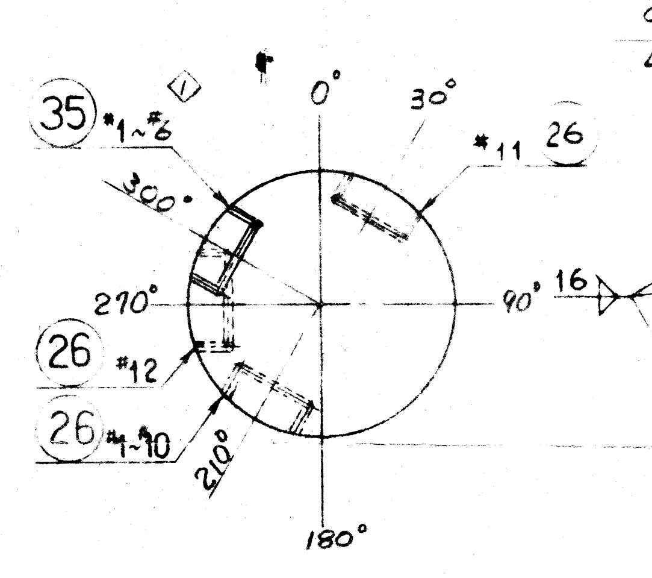


NOZZLE ORIENTATION

(S= 1/60)

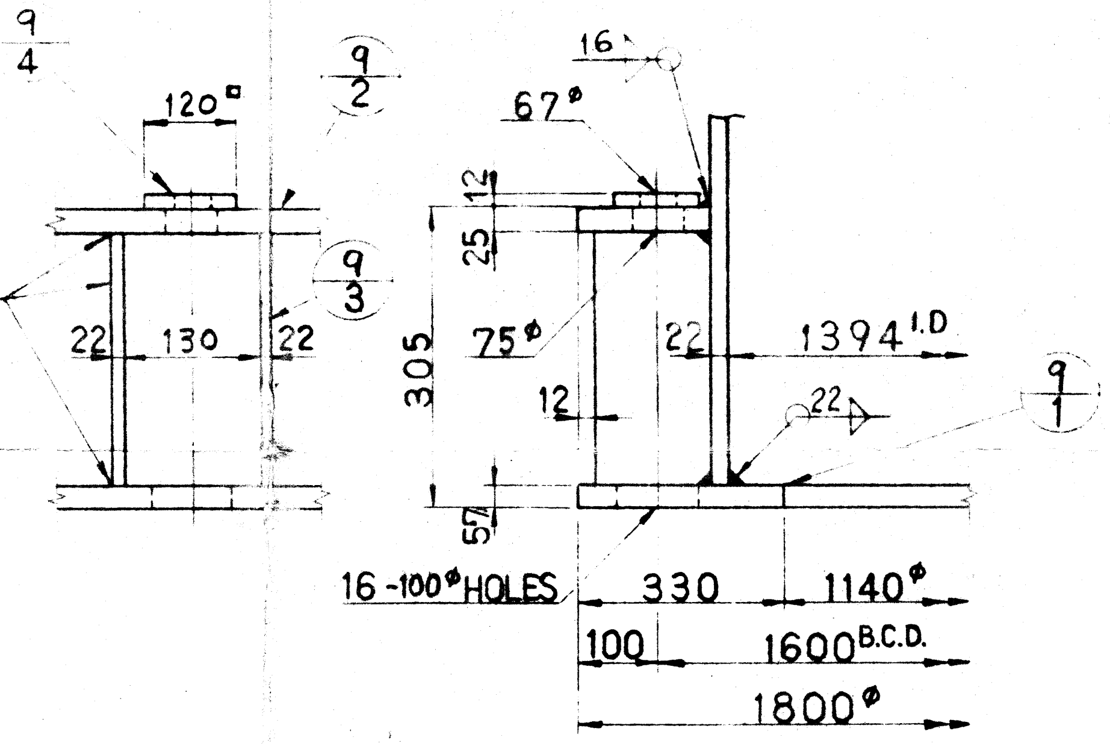


DETAIL OF WELDING JOINT (S=1/2)

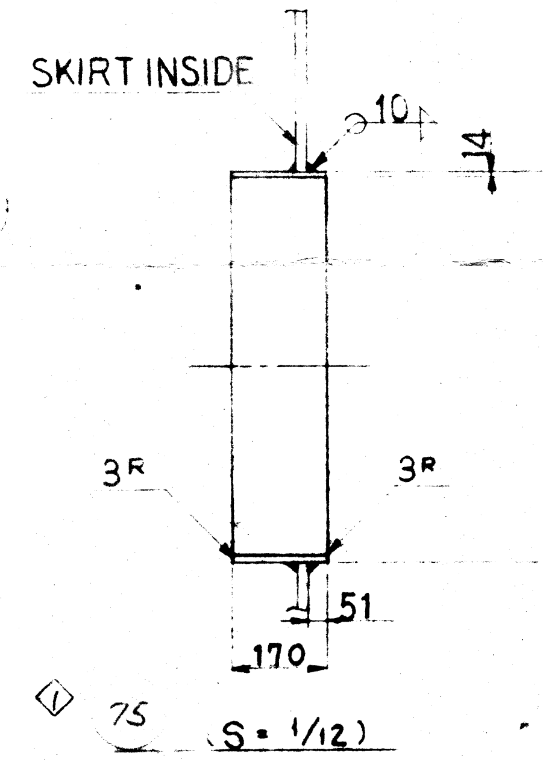


26 35 ORIENTATION

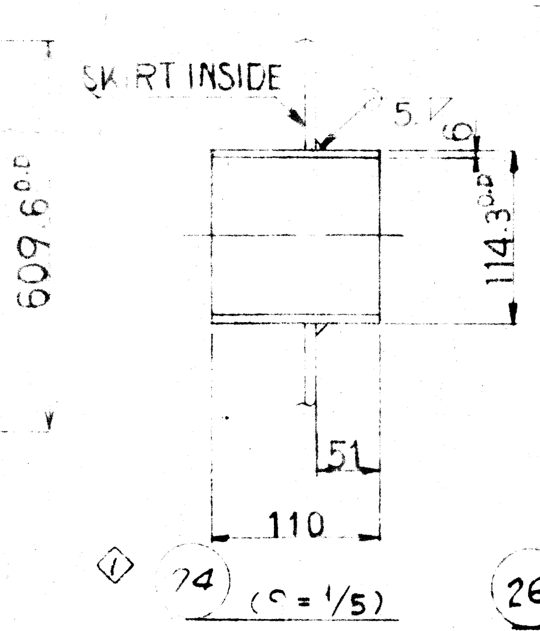
(S = 1/40)



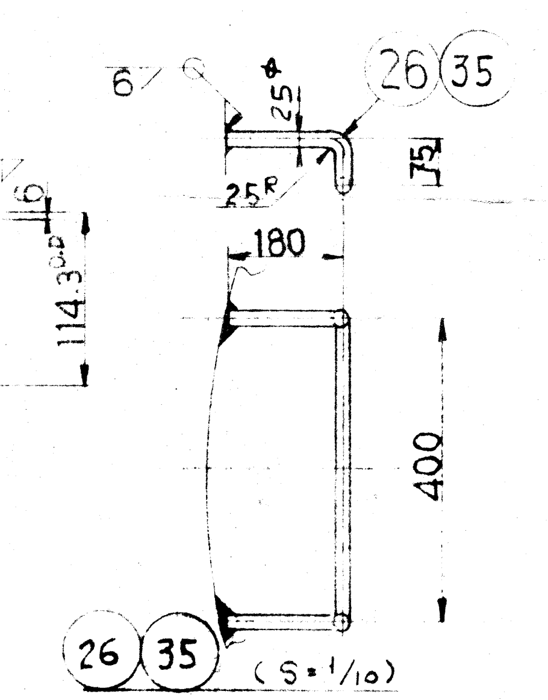
9 DETAIL OF BASE (S=~)



⟨1⟩ 75 (S= 1/12)



⟨1⟩ 74 (S= 1/5)



26 35 (S= 1/10)

FINAL

U

NO.	DESCRIPTION
1	SHELL PLATE
2	↕
3	↕
4	↕
5	SHELL PLATE
6	TOP HEAD PLATE
7	BOTTOM HEAD PLATE
8	SKIRT PLATE
9	BASE BLOCK
-1	BASE PLATE
-2	UPPER PLATE
-3	GUSSET PLATE
-4	WASHER
10	ANCHOR BOLT & HEAVY NUT
11	TEMPLATE
20	NAME PLATE
21	INSULATION SUPPORT RING
22	INSULATION SUPPORT RING
23	FIREPROOFING SUPP.
⟨4⟩ 24	LIFTING LUG
25	TOP DAVIT
⟨1⟩ 26	SKIRT INSIDE LADDER
27	PLATFORM & LADDER CLIP
⟨3⟩ 28	PIPE SUPPORT CLIP
29	EARTH PIECE
30	TRAY SUPPORT RING
31	TRAY SUPPORT RING
32	SEAL PAN SUPPORT
33	ANTI-SPLASH BAFFLE
34	VORTEX BREAKER
⟨1⟩ 35	INTERNAL LADDER
80	INTERNAL PIPE
⟨3⟩ ~~81~~	~~INTERNAL PIPE~~
82	COVER FLANGE
-1	COVER FLANGE
⟨1⟩ -2	STUD BOLT & HEAVY NUT
-3	GASKET

MARUZEN ENGINEER
MAY 26,
GULF OF SUEZ GAS

NOTES.

1. APPLICABLE CODE
   ASME BOILER AND PRESSURE VESSEL CODE SECTION VIII DIVISION 1. 1977 EDITION INCLUDING 1979 SUMMER ADDENDA.
2. WELDING MATERIAL
   (1) SMAW — SFA5.1 E-7016 — TRADE NAME B-52
   (2) TAW — --- --- — TRADE NAME TGS-50
   (3) SAW — SFA5.17 F76-EH14 — TRADE NAME MF[illegible]-US36
3. RADIOGRAPHIC EXAMINATION FOR WELD
   IN ADDITION TO SPOT RADIOGRAPHY PER UW-11(b). HEAD TO SHELL JOINT SHALL BE PARTIALLY RADIOGRAPHED PER UW-11(a)(5)(b).
4. WELD HARDNESS
   (1) HARDNESS TEST SHALL BE CARRIED OUT AND HARDNESSES SHALL NOT EXCEED HB 200.
   (2) THE NUMBER AND LOCATION OF HARDNESS TEST SHALL BE AS FOLLOWS.
   - ONE FOR EACH 10 FEETS, OR FRACTION THEREOF, FOR EACH LONGITUDINAL SEAM.
   - ONE FOR EACH 10 FEETS, OR FRACTION THEREOF, FOR EACH CIRCUMFERENTIAL SEAM.
   - ONE FOR EACH NOZZLE TO SHELL WELD.
   - ONE FOR EACH AREA WHERE TEMPORARY WELD WAS REMOVED.
   - LOCATION TO BE TESTED SHALL BE AT OR HEAR THE CENTER OF THE WELD.
   - SURFACE TO BE TESTED SHALL BE ON THE SIDE EXPOSED TO THE PROCESS ENVIRONMENT. WHERE NOT PRACTICAL, TEST SHALL BE MADE ON THE OPPOSITE SIDE.
5. HEAT TREATMENT PER UCS-79
   FORMED BOTTOM HEAD SHALL BE HEAT TREATED AS FOLLOWS.
   HOLDING TEMP. --- 625 + 25°C
   HOLDING TIME --- 1 HOUR
6. VESSEL AND ITS SUPPORT ARE CAPABLE OF A FIELD HYDROSTATIC TEST.
7. EXTERNAL ATTACHMENTS WHOSE WELD CROSS VESSEL SEAM SHALL BE CUT OUT LOCALLY SO AS TO AVOID INTERSECTION OF EACH WELDS.
8. FLANGE BOLT HOLES SHALL STRADDLE THE VERTICAL OR EAST-WEST. NORTH-SOUTH HORIZONTAL CENTER LINES.
9. GASKET SURFACE SHALL HAVE A SERRATED FACING FINISH IN ACCORDANCE WITH ANSI B16.5.
10. HYDROSTATIC PRESSURE TEST
    (1) HYDROSTATIC PRESSURE TEST SHALL BE CARRIED OUT IN ACCORDANCE WITH UG-99(b) OF ASME SECT. VIII DIV. 1.
    (2) TEST PRESSURE SHALL BE MAINTAINED FOR A PERIOD OF NOT LESS THAN HALF AN HOUR.
    (3) CHLORIDE CONTENTS OF WATER SHALL NOT EXCEED 3[illegible] PPM.
11. LEAKAGE TEST
    1) ALL REINFORCING PAD WELD FOR NOZZLES SHALL BE CHECKED FOR LEAK WITH MINIMUM AIR PRESSURE OF 1 KG/CM²G (15 PSIG).
    2) TEST HOLES ON REINFORCING PAD SHALL BE FILLED WITH STIFF GREASE AFTER HYDROSTATIC TESTING.
12. FABRICATION TOLERANCE SHALL BE IN ACCORDANCE WITH C.F. BRAUN'S SPECIFICATION 9211-1[illegible]-1[illegible]-7 AND 1[illegible]-1[illegible].
13. SHOP PAINTING
    ⟨3⟩ SEE DWG. NO. C-8025673
14. QUANTITIES LISTED ARE FOR ONE VESSEL.
    TOTAL REQUIRED — 1 VESSEL
15. SUPPORT SKIRT
    (1) WELDING APPLICATION FOR CIRCUMFERENTIAL AND LONGITUDINAL SEAMS OF THE SKIRT SHELL SHALL BE SAW.
    (2) SPOT RADIOGRAPHY SHALL BE MADE OF EACH INTERSECTION OF CIRCUMFERENTIAL AND LONGITUDINAL SHELL SEAM. IN ADDITION, ONE RADIOGRAPH SHALL BE TAKEN FOR EACH 15 METER (50 FEETS) OF WLED AT LOCATION CHOSEN BY THE **CUSTOMER'S INSPECTOR.** RADIOGRAPHY SHALL COMPLY WITH ASME. SECT. VIII .PAR.UW-52 WITH INTERPRETATION COMPLYING WITH UW-51.

NOZZLE SCHEDULE

MARK	SIZE	NO. REQ'D	PART NO.	ST'D TYPE NO	SERVICE	FLANGE RATING	FLANGE MAT'L	NECK SCH.NO. TH'K	NECK MAT'L	REINFORCING PL TH'K	REINFORCING PL MAT'L	PROJECT FROM ℄	REMARKS
⟨1⟩ M-1	20"	1	72	SEE DWG NO. B-8025435	MANHOLE	ANSI 150 W.N.RF	SA105	t12	SA516Gr60	t19	SA516Gr60	1000	W/HINGE
S0-1	16"	1	60	AA-114-A-11A	SKIRT OPENING	—	—	t14	SS41	—	—	—	
SA	24"	1	75	AS SHOWN	SKIRT ACCESS	—	—	t14	SS41	—	—	—	
SV	4"	1	74	AS SHOWN	SKIRT VENT	—	—	40	STPG38	—	—	—	
M2-3	20"	2	73	SEE DWG NO. B-8025804	MANHOLE	ANSI 150 W.N R.F	SA105	t12	SA516Gr60	t12	SA516Gr60	1000	W/HINGE
⟨2⟩ N16	1½"	1	68	SEE DWG NO. C-8025627	THERMOWELL	ANSI 150 LN. RF		(14.3)	—	—	—	930	
N15A/B	1"	2	71	AA-310-A-33B	LEVEL GAUGE	ANSI 150 LWN. RF		(XXS)	—	—	—	900	
N14	2"	1	70	AA-101-A-11A	UTILITY	ANSI 150 W.N R.F		160	SA106Gr.B	t19	SA516Gr60	900	
⟨2⟩ N13	1½"	1	68	SEE DWG NO. C-8025627	THERMOWELL	ANSI 150 LN. RF		(14.3)	—	—	—	930	
⟨2⟩⟨1⟩ N12	1½"	1	68	SEE DWG NO. C-8025627	THERMOWELL	ANSI 150 LN. RF		(14.3)	—	—	—	930	
N11	2"	1	69	AA-101-B-11A	VENT	ANSI 150 W.N R.F		160	SA106Gr.B	t12	SA516Gr60	AS SHOWN	W/BLIND FLANGE
⟨4⟩⟨2⟩⟨1⟩ N9	1½"	1	76	SEE DWG NO. C-8025627	TEMP. INDIC.	ANSI 150 LN. RF		(14.3)	—	—	—	900	
N8	10"	1	67	AA-101-A-11A	OVHD VAPOR	ANSI 150 W.N R.F		80	SA106Gr.B	t12	SA516Gr60	AS SHOWN	
N7	6"	1	66	AA-101-A-11A	REFLUX	ANSI 150 W.N R.F		↕	↕	t12	↕	950	
⟨3⟩⟨1⟩ ~~N6~~	~~6"~~	~~1~~	~~65~~	~~AA-109-B-11A~~	~~OFF SPEC LPG~~	~~ANSI 300 W.N R.F~~				~~t12~~			~~W/INT. PIPE~~
N5	8"	1	64	AA-109-B-11J	FEED	ANSI 150 W.N R.F		↕	↕	t12	↕	950	W/INT. PIPE
N4	8"	1	63	↕	FEED	↕		↕	↕	t12	↕	↕	W/INT. PIPE
⟨1⟩ N3	8"	1	62	AA-109-B-11J	FEED	↕		↕	↕	t12	↕	↕	W/INT. PIPE
N2	8"	1	61	AA-101-A-11A	REBOILER VAP. IN	↕	↕	↕	SA106Gr.B	t19	↕	950	
N1	8"	1	60	AA-114-A-11A	REBOILER FEED	ANSI 150 W.N R.F	SA105	80	SA106Gr.B SA234WPB	t19	SA516Gr60	AS SHOWN	W/VORTEX BREAKER

0	SEP. 4, '80	
1	NOV. 18, '80	
2	JAN. 2[illegible], '81	
3	FEB. [illegible]	
4	MAR. 24, '81	

DESIGN DATA		
REGULATION	—	
CODE	ASME SECT. VIII DIV. 1. 1977 EDITION UP TO 1979 SUMMER ADDEDA	
SPECIFICATION	—	
FLUID NAME		
OPERATING PRESSURE	8.5	kgf/cm²G
OPERATING TEMPERATURE	196	°C
DESIGN PRESSURE	10.5	kgf/cm²G
DESIGN TEMPERATURE	230	°C
RADIOGRAPH SHELL/HEAD	SPOT / N.A	
JOINT TYPE	DOUBLE WELDED BUTT JOINT	
JOINT EFFICIENCY SHELL/HEAD	85/100	%
CORROSION ALLOWANCE	3.0	mm
POSTWELD HEAT TREATMENT	NO	
HYDRAULIC TEST PRESSURE	15.8	kgf/cm²G
PNEUMATIC TEST PRESSURE	—	kgf/cm²G
SHIPPING WEIGHT	20500	kgf
OPERATING WEIGHT	45700	kgf
INTERNALS WEIGHT	—	kgf
EXTERNALS WEIGHT	—	kgf
FULL WATER WEIGHT	88700	kgf
VOLUME	44.7	m³
INSULATION	YES (51 mm)	
FIRE PROOFING	YES (SKIRT OUTSIDE)	
NUMBER REQUIRED	1	SET

NO:	DESCRIPTION
⟨4⟩	(N?) NOZZ. PROJ. FROM ℄ LIFTING LUG MA
⟨3⟩	(N6) NOZZ. DELETE, EARTH PIECE AD
⟨2⟩	NOZZ. ORIENT. & EL. etc.
⟨1⟩	NOZZ. ST'D TYPE NO. & INTERNAL LADDER etc.

REVISIONS

REV	⟨1⟩	DATE	
	ISSUED FOR CONSTR		
DATE	7/23 80	SEP. 3 '80	SEP.
BY			
	DRAWN	DSGND	CH

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DAELIM ENG. CO., LTD.
MARUZEN ENG. INC.

P.O. NO.

REF. SPEC. NO.
9211-104-111-1

FOR
EGYPTIAN GENERAL PETROL
SITE : RAS SHUKHEIR

CHIYODA
YOKOHAMA

TITLE
GULF OF SUEZ GA
MAIN PROC
4-T2 DEBUTAN

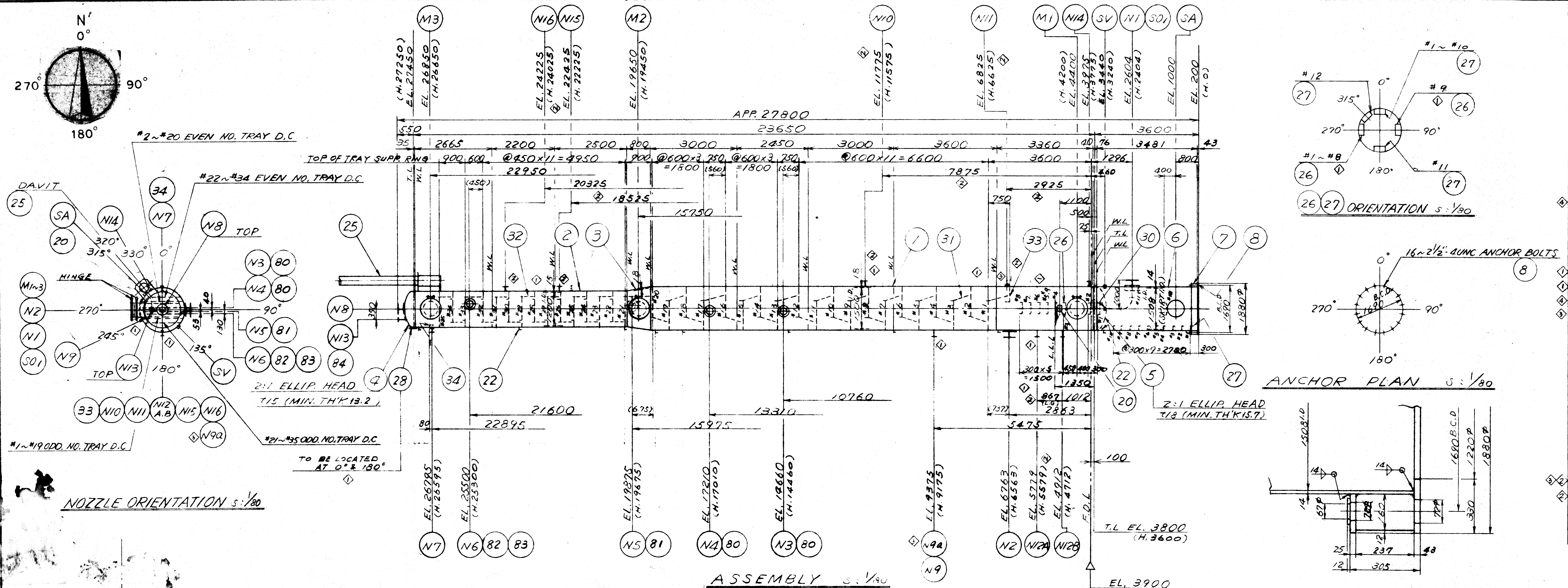
SCALE AS SHOWN

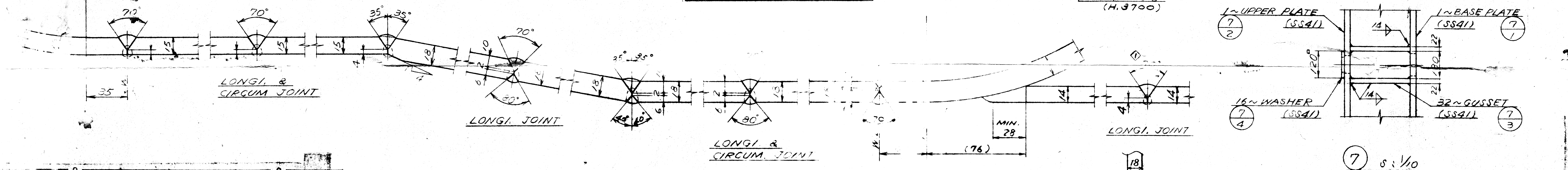
PROJECT

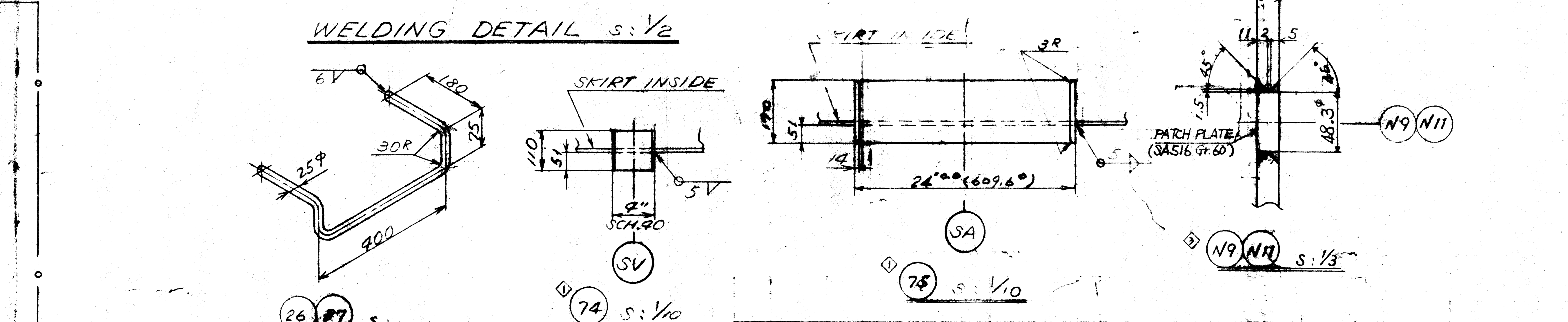
DRAWING NO.
A-80255

WORK

[101]







NO.	DESCRIPTION	MATL	QUANT
1	SHELL PLATE	SA516 Gr.60	1
2	SHELL PLATE		1
3	CONICAL SHELL PLATE		1
4	TOP HEAD PLATE		1
5	BOTTOM HEAD PLATE	SA516 Gr.60	1
6	SKIRT PLATE	SA283 Gr.C	1
7	BASE BLOCK	SS41	1 SET
8	ANCHOR BOLT & HEAVY NUT		16 SETS
9	TEMPLATE	SS41	1 SET
20	NAME PLATE	SUS304 SA283 Gr.C	1 SET
◇4 ~~21~~	~~FIRE PROOFING SUPPORT~~	~~C.S~~	~~1 SET~~
22	INSULATION SUPPORT	A36 SS41	1 SET
23	PLATFORM & LADDER CLIP	SA283 Gr.C	1 SET
24	PIPE SUPPORT CLIP	SA283 Gr.C	1 SET
25	TOP DAVIT	—	1 SET
◇1 26	INSIDE LADDER	A36	9
◇1 27	INTERNAL LADDER	A36	12
◇4 28	LIFTING LUG	SA283 Gr.C SB42	1 SET
◇3 29	EARTH PIECE	SUS304	1
30	VORTEX BREAKER	C.S	1 SET
31	TRAY SUPPORT	SA283 Gr.C	20 SETS
32	TRAY SUPPORT		15 SETS
33	SEAL PAN SUPPORT		1 SET
34	ANTI-SPLASH BAFFLE	SA283 Gr.C	1 SET
80	INTERNAL PIPE	—	2 SETS
81	INTERNAL PIPE	—	1 SET
82	INTERNAL PIPE	—	1 SET
83-1	REDUCING FLANGE (N6)	SA350 LF3	1
◇3◇2 -2	GASKET	TEFLON	1
◇2 -3	STUD BOLT & HEAVY NUT (N6)	SA320 Gr.[illegible] SA194 Gr.[illegible]	1
84-1	BLIND FLANGE (N13)	SA105	1
-2	GASKET	V#15[illegible]	1
-3	STUD BOLT & HEAVY NUT (N13)	SA193 Gr.[illegible] SA194 Gr.[illegible]	1

MARUZEN ENGINEERING
MAY 26, 198
GULF OF S

[illegible]
[illegible] ODE
[illegible] ILER AND PRESSURE VESSEL CODE SECTION VIII
[illegible] ON 1,1977 EDITION INCLUDING 1979 SUMMER ADDENDA.
[illegible] NG MATERIAL
(1) SMAW - SFA5.1 E-7016 - TRADE NAME LB-52
(2) GTAW - --------- - TRADE NAME TGS-50
(3) SAW - SFA5.17 F76-EH14- TRADE NAME MF38-US36

3. RADIOGRAPHIC EXAMINATION FOR WELD
IN ADDITION TO SPOT RADIOGRAPHY PER UW-11(b), HEAD TO SHELL JOINT SHALL BE PARTIALLY RADIOGRAPHED PER UW-11(a)(5)(b).

4. WELD HARDNESS
(1) HARDNESS TEST SHALL BE CARRIED OUT AND HARDNESSES SHALL NOT EXCEED HB 2[illegible].
(2) THE NUMBER AND LOCATION OF HARDNESS TEST SHALL BE AS FOLLOWS.
- ONE FOR EACH 10 FEETS, OR FRACTION THEREOF, FOR EACH LONGITUDINAL SEAM.
- ONE FOR EACH 10 FEETS, OR FRACTION THEREOF, FOR EACH CIRCUMFERENTIAL SEAM.
- ONE FOR EACH NOZZLE TO SHELL WE[illegible]
- ONE FOR EACH AREA WHERE TEMPORARY WELD WAS REMOVED.
- LOCATION TO BE TESTED SHALL BE AT OR NEAR THE CENTER OF THE WELD.
- SURFACE TO BE TESTED SHALL BE ON THE [illegible] EXPOSED TO THE PROCESS ENVIRONMENT. WHERE NOT PRACTICAL, TEST SHALL BE MADE ON THE OPPOSITE SIDE.

5. ~~HEAT TREATMENT PER UCS-79~~
~~FORMED BOTTOM HEAD SHALL BE HEAT TREATED AS FOLLOWS.~~
~~HOLDING TEMP. --- 625 ± 25°C~~
~~HOLDING TIME --- 1 HOUR~~

6. VESSEL AND ITS SUPPORT ARE CAPABLE OF A FIELD HYDROSTATIC TEST.
7. EXTERNAL ATTACHMENTS WHOSE WELD CROSS VESSEL SEAM SHALL BE CUT OUT LOCALLY SO AS TO AVOID INTERSECTION OF EACH WELD.
8. FLANGE BOLT HOLES SHALL STRADDLE THE VERTICAL OR EAST WEST, NORTH SOUTH HORIZONTAL CENTER LINES.
9. GASKET SURFACE SHALL HAVE A SERRATED FACING FINISH IN ACCORDANCE WITH ANSI B16.5.
10. HYDROSTATIC PRESSURE TEST
(1) HYDROSTATIC PRESSURE TEST SHALL BE CARRIED OUT IN ACCORDANCE WITH UG-99(b) OF ASME SECT. VIII DIV.1.
(2) TEST PRESSURE SHALL BE MAINTAINED FOR A PERIOD OF NOT LESS THAN HALF AN HOUR.
(3) CHLORIDE CONTENTS OF WATER SHALL NOT EXCEED 3000PPM.

11. LEAKAGE TEST
(1) ALL REINFORCING PAD WELDS FOR NOZZLES SHALL BE CHECKED FOR LEAK WITH MINIMUM AIR PRESSURE OF 1 K[illegible] (15 PSIG)
2) TEST HOLES IN REINFORCING PAD SHALL BE FILLED WITH STIFF GREASE AFTER HYDROSTATIC TESTING.
12. FABRICATION TOLERANCE SHALL BE IN ACCORDANCE WITH C.F. BRAUN'S SPECIFICATION 9211-100-100-7 AND 10-14.
13. SHOP PAINTING
◇3 SEE DWG. NO. C-8025672
14. QUANTITIES LISTED ARE FOR ONE VESSEL.
TOTAL REQUIRED -- 1 VESSEL
15. SUPPORT SKIRT
(1) WELDING APPLICATION FOR CIRCUMFERENTIAL AND LONGITUDINAL SEAMS OF THE SKIRT SHELL SHALL BE SAW.
(2) SPOT RADIOGRAPHY SHALL BE MADE OF EACH INTERSECTION OF CIRCUMFERENTIAL AND LONGITUDINAL SHELL SEAM. IN ADDITION, ONE RADIOGRAPH SHALL BE TAKEN FOR EACH 15 METER (50 FEETS) OF WELD AT LOCATION CHOSEN BY THE **CUSTOMER'S INSPECTOR.**
RADIOGRAPHY [illegible] COMPLY WITH ASME.SECT. VIII PAR.UW 52 WITH INTERPRETATION COMPLYING WITH UW-51.

MARK	SIZE	NO. REQD	PART NO.	STD TYPE NO	SERVICE	FLANGE RATING	FLANGE MATL	NECK SCH. NO.	NECK MATL	REINF. ℞ THK	REINF. ℞ MATL	PROJ. FROM SHELL ℄	REMARKS
◇1 N9	—	1	176	AS SHOWN	—	—	—	—	—	—	—	—	
SO1	18"	1	60	AA-114-A-11A	—	—	—	t12	SS41	—	—	—	
◇1 SA	24"	1	75	AS SHOWN	SKIRT MANWAY	—	—	t14	SS41	—	—	—	
SV	4"	1	74	AS SHOWN	SKIRT VENT	—	—	40	STPG38	—	—	—	
M3	20"	1	73	SEE DWG. NO. B-8025427	MANHOLE	ANSI 300 WN. RF	SA105	t12	SA516 Gr.60	t15	SA516 Gr.60	900	W/HINGE
◇2 M2	20"	1	72	SEE DWG. NO. B-8025832	MANHOLE			t12 (BOSS)	SA105	—	—	1050	
◇5 M1	20"	1	71	SEE DWG. NO. B-8025427	MANHOLE	ANSI 300 WN. RF		t12	SA516 Gr.60	t18	SA516 Gr.60	1050	W/HINGE
N16	1½"	1	77	SEE DWG. NO. C-8025626	T.I CONN.	ANSI 300 LN. RF		(15.9)	—	—	—	800	
◇2 N15	1½"	1	77	SEE DWG. NO. C-8025626	THERMOWELL	ANSI 300 LN. RF		(15.9)	—	—	—	800	
N14	2"	1	69	AA-101-A-11A	UTILITY	ANSI 300 WN. RF		160	SA106 Gr.B	t18	SA516 Gr.60	950	
N13	2"	1	68	AA-101-B-11A	VENT	ANSI 300 WN. RF		160	SA106 Gr.B	t15	SA516 Gr.60	—	W/BL'D FL'G
N12 A/B	1"	2	67	AA-310-A-33B	L.G CONN.	ANSI 300 LWN. RF	SA105	(XXS)	—	—	—	960	
◇3◇2 N11	—	1	176	AS SHOWN	—	—	—	—	—	—	—	—	
◇3◇2◇1 [illegible]	1½"	2	76	SEE DWG. NO. C-8025626	THERMOWELL	ANSI 300 LN. RF	SA105	(15.9)	—	—	—	980	
N8	8"	1	66	AA-101-A-11A	OVER HEAD VAPOR	ANSI 300 WN. RF		80	SA106 Gr.B	t15	SA516 Gr.60	—	
N7	2"	1	65	AA-101-A-11A	REFLUX		SA105	160	SA106 Gr.B			800	
N6	3"×8"	1	64	AA-119-B-11A	FEED		3" SA[illegible] 8" SA105	160 80	SA333 Gr.3 SA106 Gr.B	t15	SA516 Gr.60	800	W/REDUCING FL'G
N5	8"	1	63	SEE DWG. NO. C-8025498	FEED		SA105	80 (BOSS)	SA105	—	—	1000	
N3,4	8"	2	62	AA-109-B-11J	FEED			80	SA106 Gr.B	t18	SA516 Gr.60	1000	
N2	10"	1	61	AA-101-A-11A	REBOILER VAPOR IN				SA106 Gr.B			1000	
N1	10"	1	60	AA-114-A-11A	REBOILER FEED	ANSI 300 WN. RF	SA105	80	SA106 Gr.B SA234 WPB	t18	SA516 Gr.60	—	W/VORTEX BREAKER

NOZZLE SCHEDULE

DESIGN DATA	
REGULATION	—
CODE	ASME SECT. VIII DIV.1-1977 EDITION UP TO 1979 SUMMER ADDENDA
SPECIFICATION	—
FLUID NAME	
OPERATING PRESSURE	14.8 kgf/cm²G
OPERATING TEMPERATURE	123 °C
DESIGN PRESSURE	17.0 kgf/cm²G
DESIGN TEMPERATURE	155 °C
RADIOGRAPH SHELL/HEAD	SPOT / N.A
JOINT TYPE	DOUBLE WELDED BUTT JOINT
JOINT EFFICIENCY SHELL/HEAD	85/100 %
CORROSION ALLOWANCE	3.0 mm
POSTWELD HEAT TREATMENT	NO
HYDRAULIC TEST PRESSURE	25.5 kgf/cm²G
PNEUMATIC TEST PRESSURE	— kgf/cm²G
SHIPPING WEIGHT	19200 kgf
OPERATING WEIGHT	41700 kgf
INTERNALS WEIGHT	— kgf
EXTERNALS WEIGHT	— kgf
FULL WATER WEIGHT	77500 kgf
VOLUME	37.5 m³
INSULATION	YES (51 mm)
FIRE PROOFING	YES (SKIRT OUTSIDE)
NUMBER REQUIRED	1 SET

U

QA REVIEW

REV NO	DATE	SIGNED
0	SEP. 4, '80	Sawa
◇1	NOV. 13, '80	Sawa
◇2	JAN. 27, '81	Sawa
◇3	FEB. 27, '81	Sawa
◇4	MAR. 24, '81	Sawa

NO.	DESCRIPTION
◇E	AS BUILT
◇4	LIFTING LUG MAT'L & FIRE PROOF. SUPP
◇3	N14 NOZZ. ORIENT. & [illegible]
◇2	NOZZ. EL, SIZE etc.
◇1	NOZZ. PROJ. & INTERNAL LADDER etc.

REVISIONS

REV	◇1	DATE	NOV. 12 '80	APPROV

ISSUED FOR CONSTRUCTION

DATE	[illegible]	[illegible]	SEP. 3 [illegible]	[illegible]
BY	K. Sawa	[illegible]	[illegible]	[illegible]
	DRAWN	DSGND	CHKD	APPR

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DAELIM ENG. CO.,LTD.		
MARUZEN ENG. INC.	MAY 19, 1981	
	DATE	CHKD
P.O.NO.	9211-0500	
REF.SPEC.NO. 9211-104-111-1	REF.BRAUN DW	

FOR
EGYPTIAN GENERAL PETROLEUM CORPO
SITE : RAS SHUKHEIR

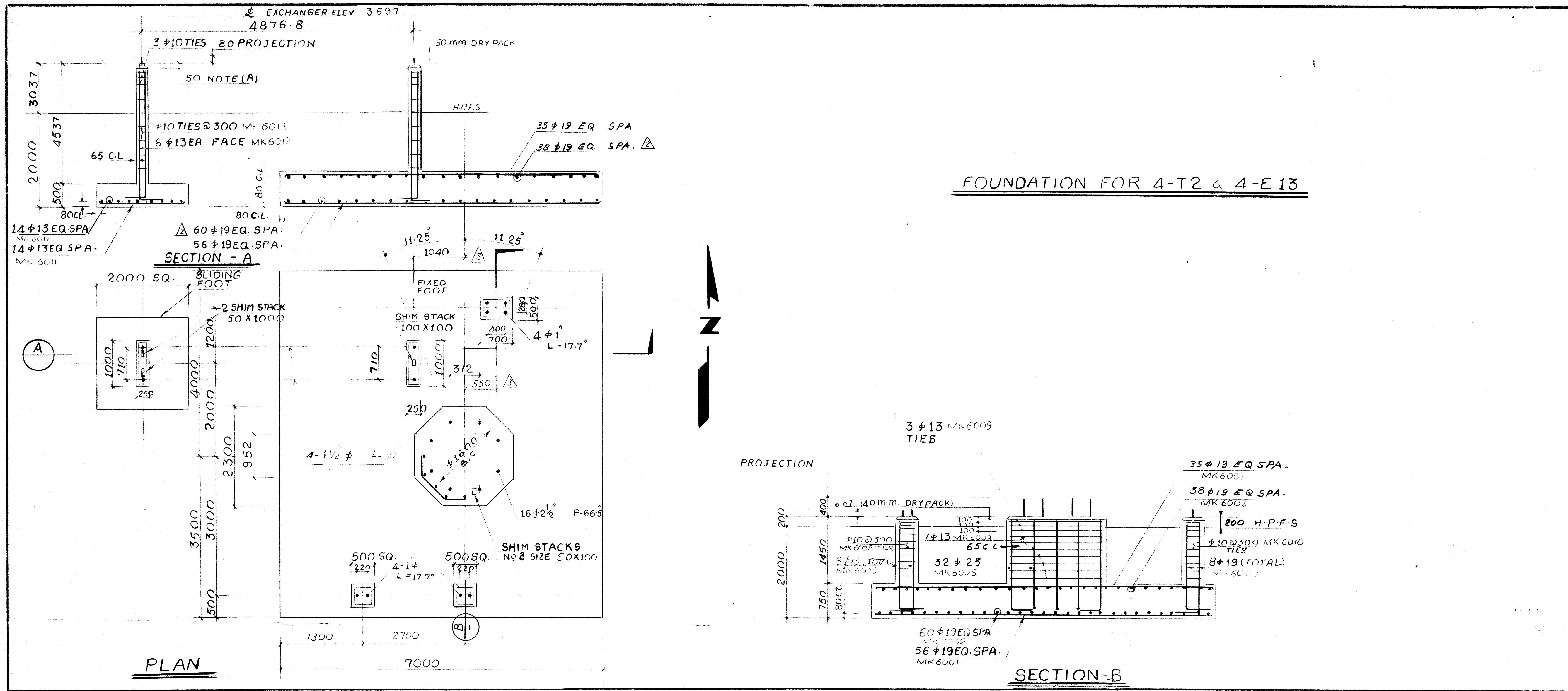
CHIYODA CHEMICAL E
& CONSTRUC
YOKOHAMA JAPAN

TITLE
GULF OF SUEZ GAS PROJ
MAIN PROCESS ARE
4-T1 DEPROPANIZE

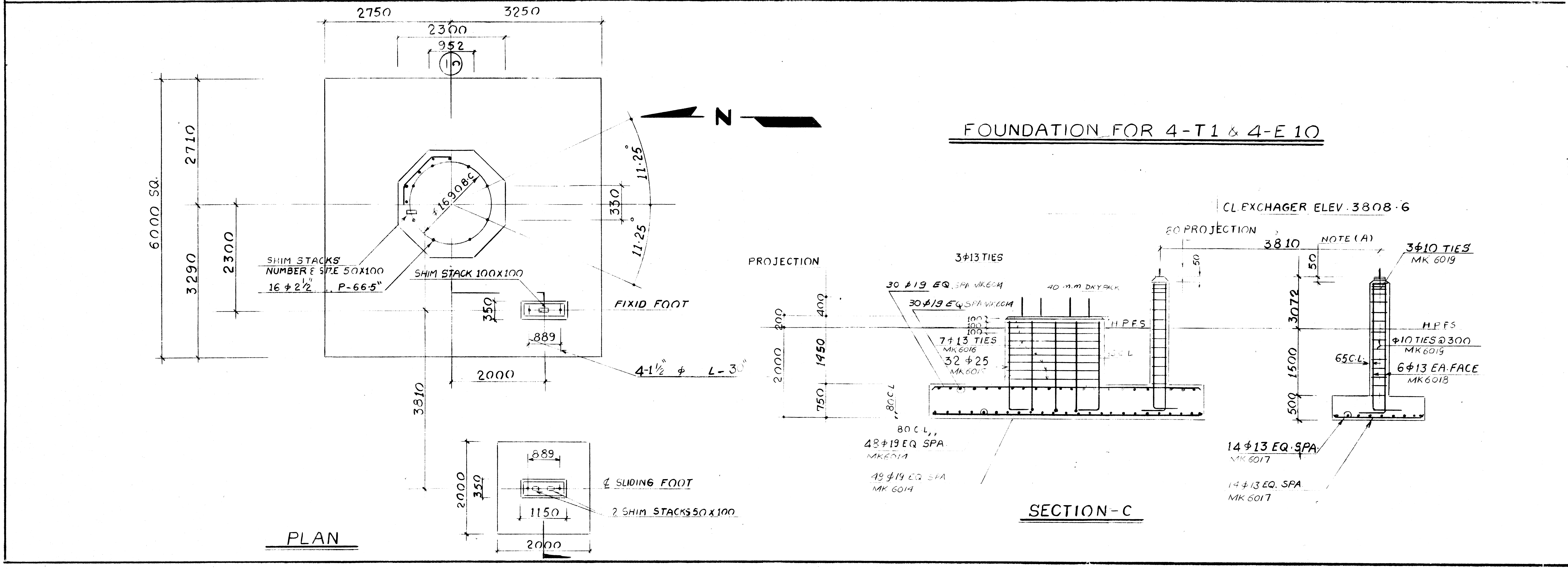
SCALE AS SHOWN | JOB NO. 934
PROJECT | DRAWING NO. A-8025572

WORK NO 104

FOUNDATION FOR 4-T2 & 4-E13



FOUNDATION FOR 4-T1 & 4-E10



NUMBER	REFERE
9211-100-300-2	CONCRETE
9211-100-300-6	CONCRETE ACCESS
9211-100-300-7	SHIM & GROUTING
9211-104-FE-11	FOUNDATION LOCAT PROCESS AR
C-8025410	4-T1 DEPROPAN .0)
C-8025411	4-T2 DEBUTANIZE 0)
——	SOIL REPOR
9211-B-104 FD-60	BAR LIST

NOTES :-

1- ALL DIMENSIONS ARE IN MM
2- LEVELS ARE RELATED TO HIGH POINT OF SURFACE (HPFS) = ELEV. (±·00)
3- CONCRETE USED FOR FOOTING CLASS
4- CONCRETE FOOTING TO BE UNDERLAID 1 M CLASS D CONCRETE BLINDING.
5- FOR 4-E 13 & 4-E 10 BEARING PLATE S SHALL BE 25 MM LARGER THAN THE APP AND THICKNESS SHALL BE 10 MM.
6- TEFLON SHEETS SHALL BE WITH A MINIMU THICKNESS OF 2.5 MM, AND DIMENSIONS ESS THAN APPARATUS BASE DIMENSIONS.

NOTE A

50 MM DIMENSION INCLUDES SHIMS, BE AT TEFLON SHEETS AND DRYPACK.

ESTIMATED MATERIAL	REVISI 0	1	2	4
CONCRETE CLASS "A" M^3	85	+11.2	0	
BARS DIA ϕ 10 TON	0.2	+0.1	0	
BARS DIA ϕ 13 TON	0.2	+0.3	0	
BARS DIA ϕ 19 TON	5.50	0	0	
BARS DIA ϕ 25 TON	0.7	0	0	
2½" P-66.5 ANCH BOLTS	32	0	0	
1½" L-30" ANCH BOLTS	8	0	0	
100x100 MM SHIM STACKS	14	-12	0	
50x100 MM SHIM STACKS	4	+16	0	
1" L-17.7" ANCH BOLTS	-	+8	0	

REV	DATE	DESCRIPTION	BY	CHEC	OVED
3	6-17-81	REVISED AS SHOWN	NADY H	A·	I.S.
2	3-19-81	REVISED AS SHOWN	Nady	A·	·S·
1	12-18-80	ISSUED FOR CONSTRUCTION	NADY H	A·	I.S
0	10-13-80	ISSUED FOR APPROVAL	NADY H	A·	I.S.

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ISSUED FOR CONSTRUCTION
BY M·S· DATE 12-18-80
CUSTOMER APPROVAL

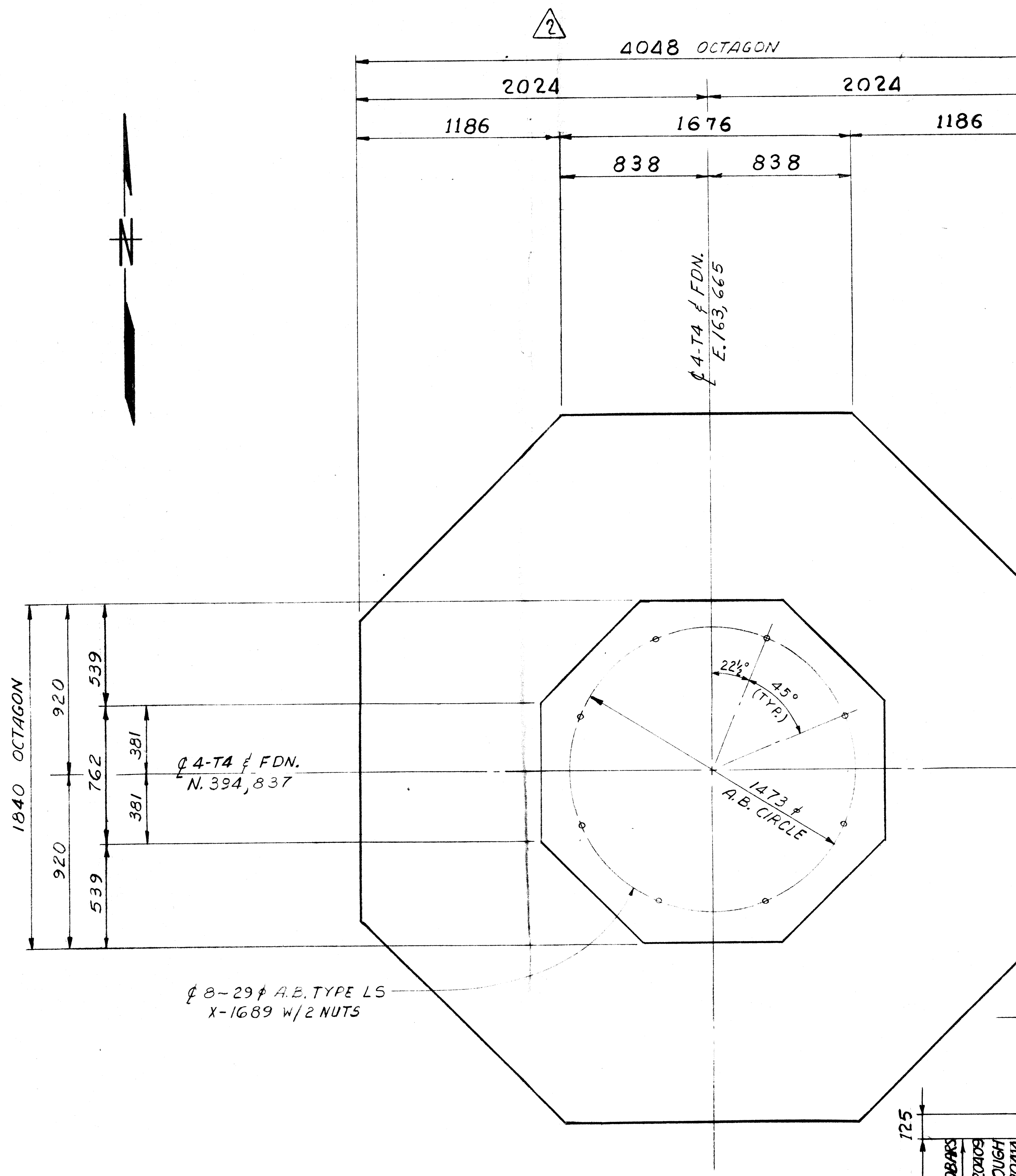
DESIGNED	DRAWN	REVIEWED
M·H	N·H	A·S

FOR E G P C
AT RAS SHUKHEIR

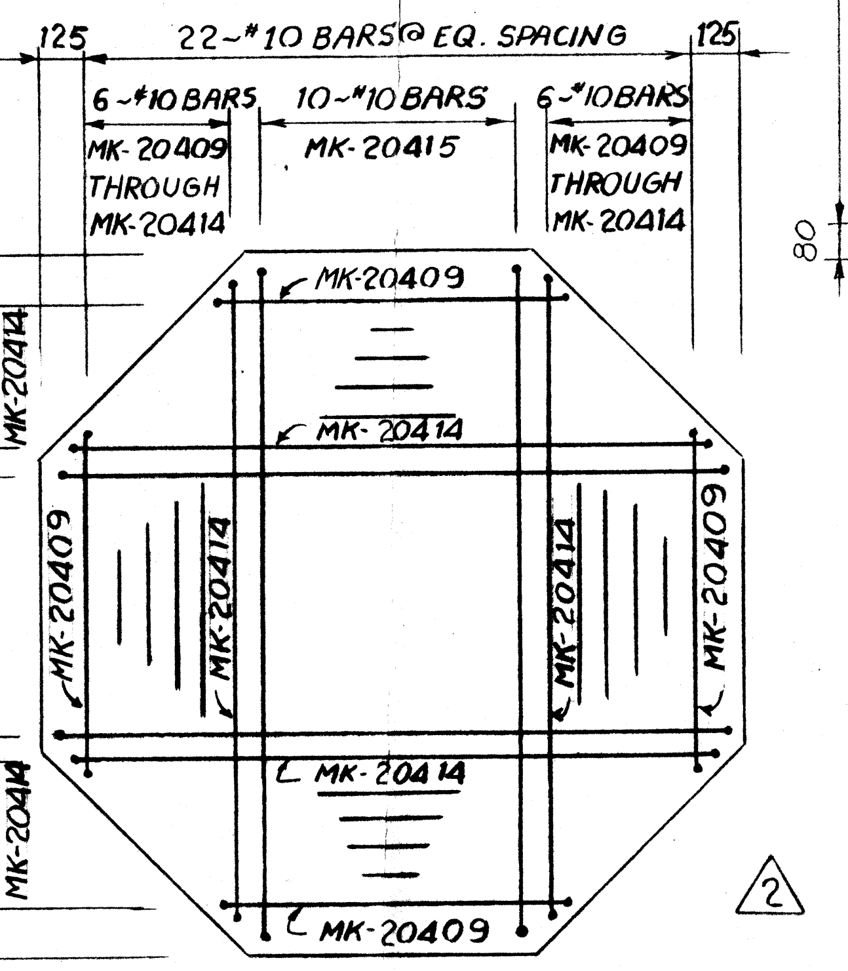
GULF OF SUEZ GAS PRO
MAIN PROCESS ARE
FOUNDATIONS FOR 4-T1
4-E10 AND 4-E13

الهندسية للصناعات البترولية والكيماوية
Enppi
ENGINEERING FOR THE PETROLEUM AND PROCESS I

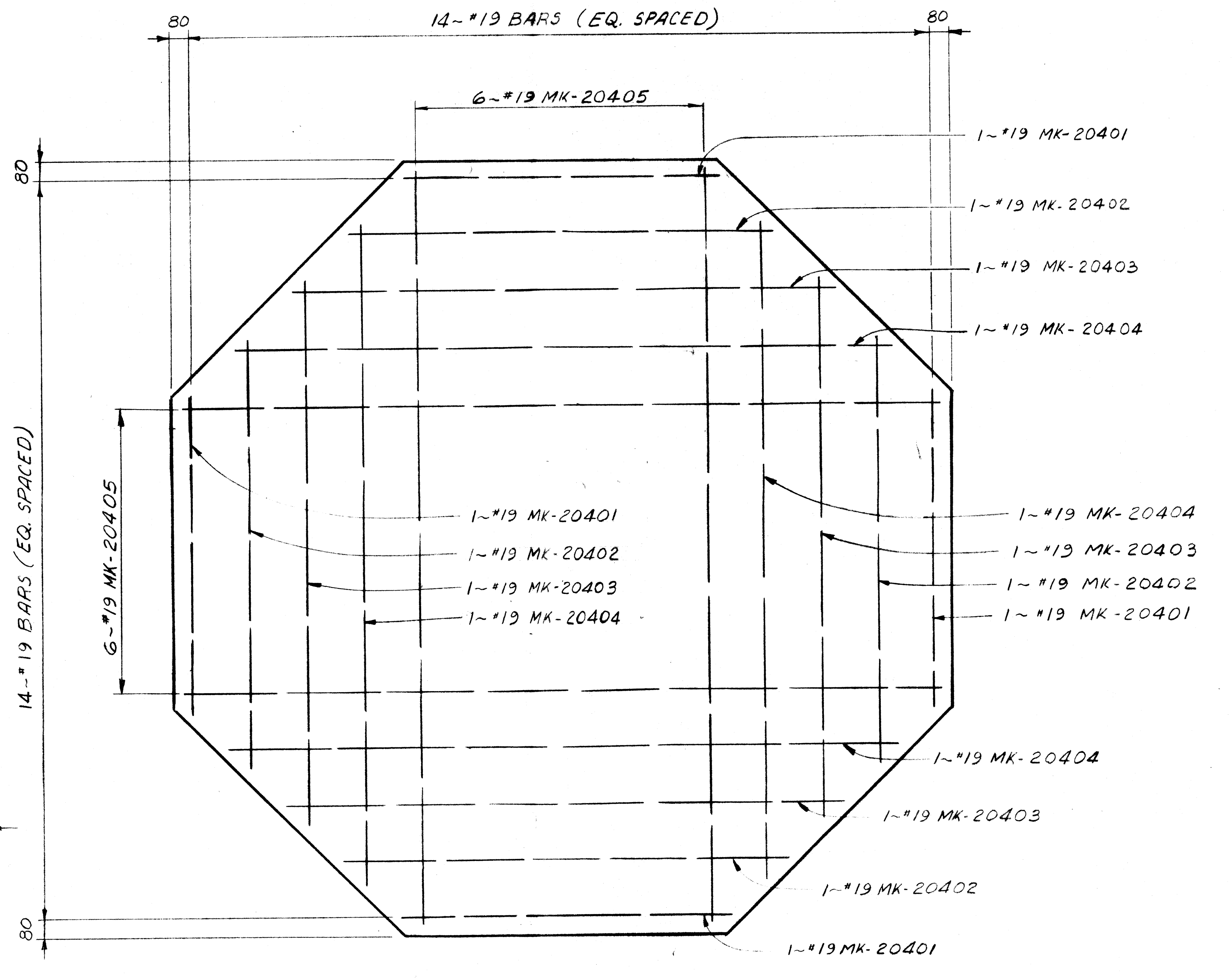
SCALE 1:50
DATE 10-13-1980
DRAWING NUMBER 9211-104-FD-6



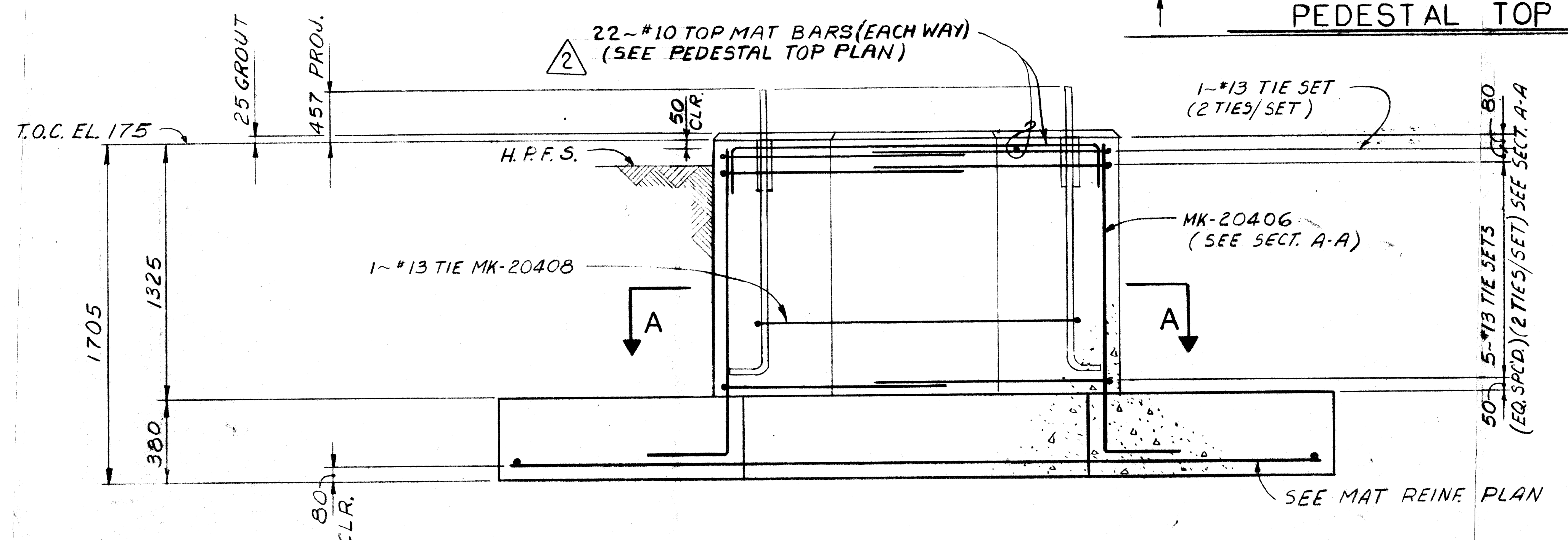
P L A N



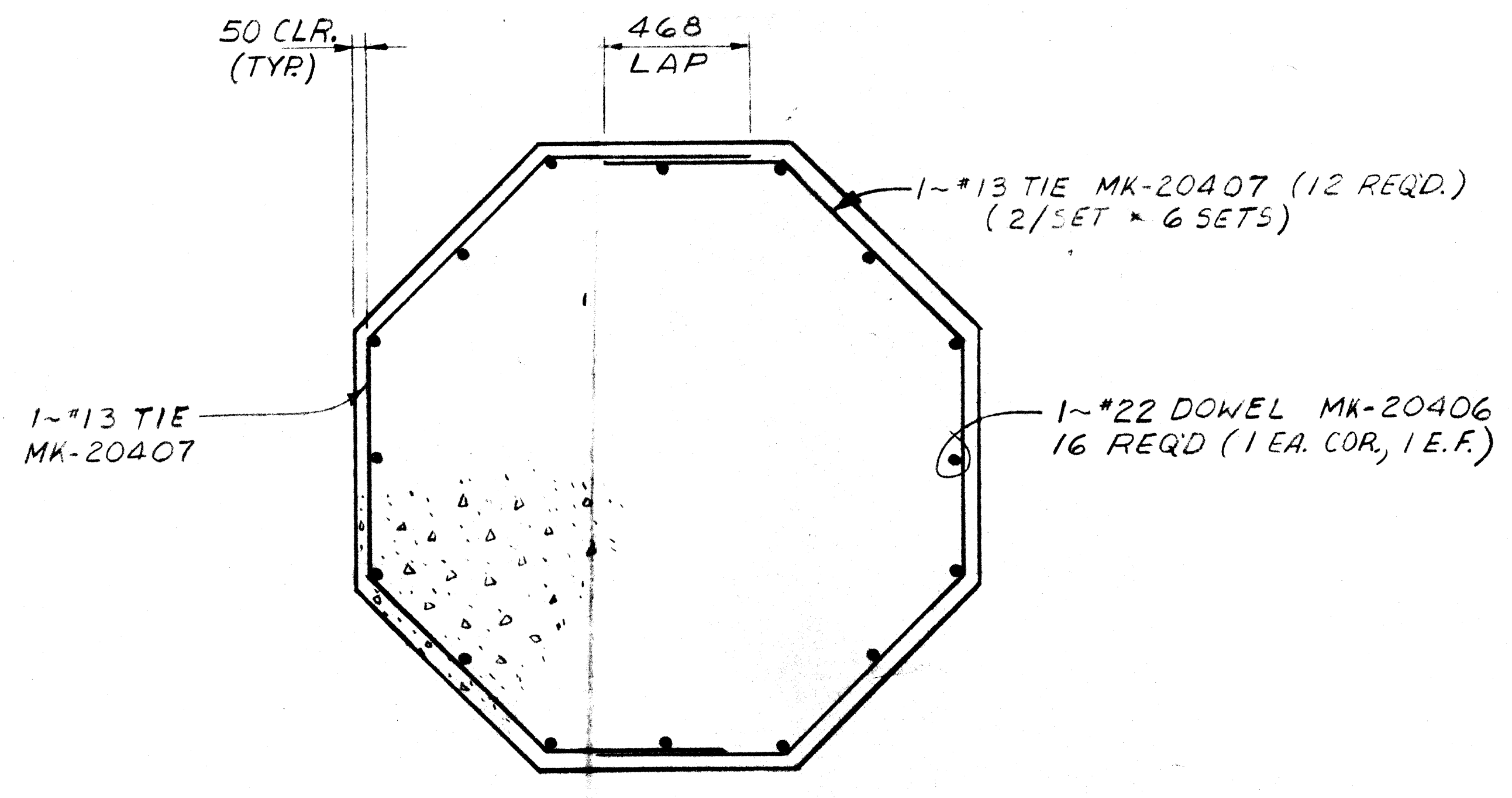
PEDESTAL TOP PLAN



MAT REINFORCING PLAN



ELEVATION



SECTION A-A

GENERAL NOTES:

1. FOR CONCRETE GENERAL NOTES SEE DRAWING 9211-104-FD-200.
2. ALL DIMENSIONS ARE IN MILLIMETERS.
3. HIGH POINT FINISHED SURFACE (H.P.F.S) = DATUM ELEV. 0.00 METERS. H.P.F.S. IS 15.51 METERS ABOVE MEAN SEA LEVEL.
4. CONCRETE FOR FOUNDATION TO BE CLASS "A".
5. GROUT QUANTITY TO BE MEASURED IN FIELD.

ESTIMATED MATERIAL		REVISION			
		0	1	2	3
CONCRETE	(M^3)	8.7	9.3		
RE-BAR	(METRIC TONS)	.37	.42		
29∅ ANCHOR BOLTS	(EA.)	8	8		
76∅ × 254 LG. BOLT SLEEVES	(EA.)	8	8		

REFERENCE DRAWINGS:

9211-104-FD-200	CONCRETE GENERAL NOTES
9211-104-FD-201	FOUNDATION LOCATION PLAN
B-9211-104-FD-222	RE-BAR SCHED. FOR 4-T4 AMINE CONTACTOR FOUNDATION
9211-104-SD-207	ANCHOR BOLT DETAILS

APPROVED A. I. O. C. HOUSTON

REV	DATE	DESCRIPTION	BY	CHECKED	DESIGNED	APPROVED
2	7-15-81	REV MAT SIZE & ADD TOP MAT @ PED	NAD/TH			M.S
1	6-30-81	ISSUED FOR CONSTRUCTION				MWS
H1	6/24/80	APPROVED FROM A.I.O.C.	ERS	D.L.D.	W.U.	6/26
H0	6/4/80	ISSUED FOR APPROVAL	D.L.D.	RNS	W.U.	

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ISSUED FOR CONSTRUCTION
BY MWS DATE 6/30/81

CUSTOMER APPROVAL

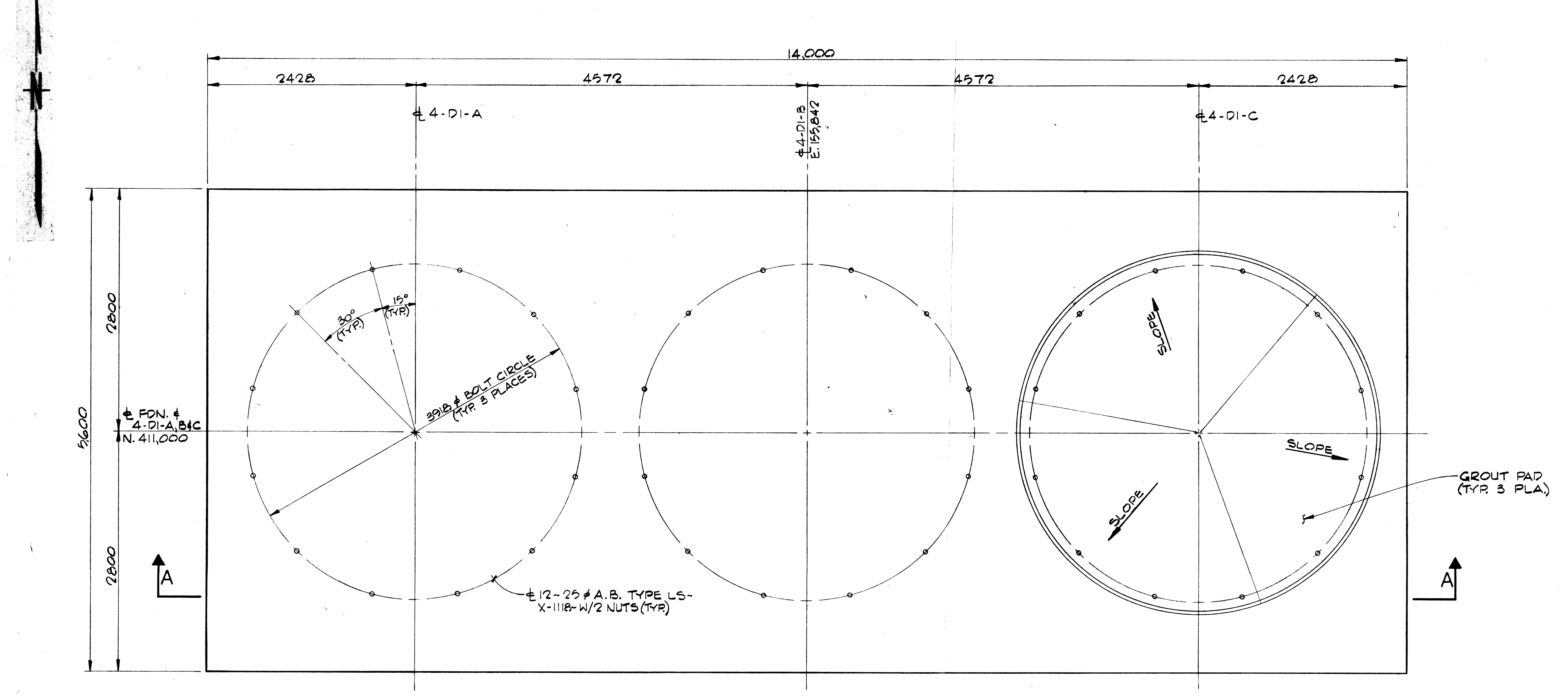
DESIGNED W.U.
DRAWN D.L.D.
REVIEWED R. SUTTON
APPROVED

FOR E.G.P.C. لأجل
AT RAS SHUKHEIR الموقع

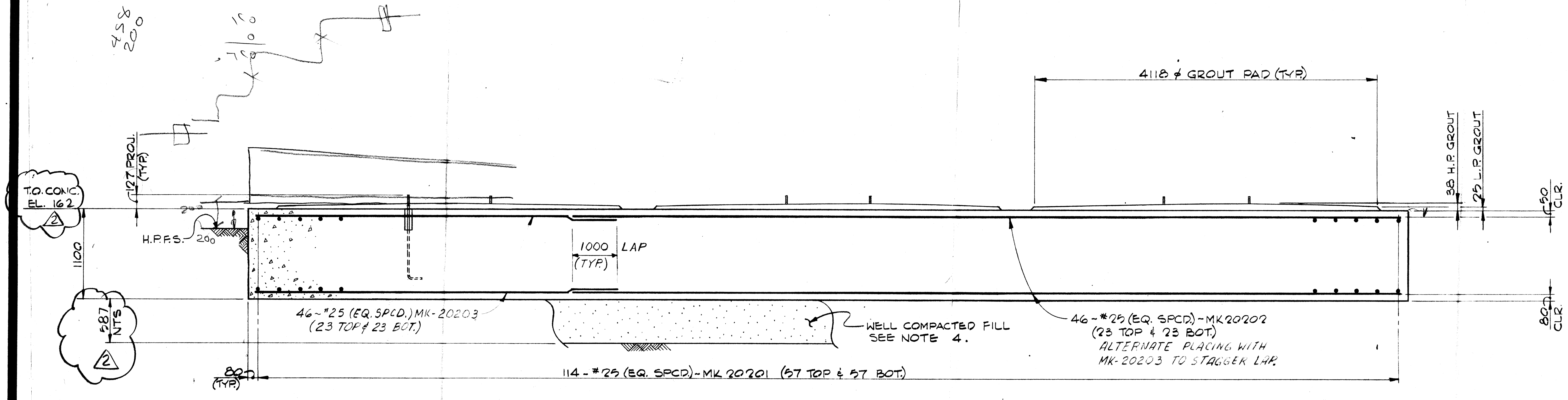
GULF OF SUEZ GAS PROJECT
GAS SWEETENING UNIT
AREA 3F STRUCTURAL
FDN. FOR AMINE CONTACTOR 4-T4

الشركة الهندسية للصناعات البترولية والكيماوية
Enppi إنبي
ENGINEERING FOR THE PETROLEUM AND PROCESS INDUSTRIES

SCALE 1:20
DATE 6-1-81
DRAWING NUMBER 9211-104-FD-204
REVISION 2



PLAN


4118 ϕ GROUT PAD (TYP.)
T.O. CONC. EL. 162
2
127 PROJ. (TYP.)
H.P.F.S.
200
1100
587 NTS
2
1000 LAP (TYP.)
46~#25 (EQ. SPCD.) MK-20203 (23 TOP & 23 BOT.)
WELL COMPACTED FILL SEE NOTE 4.
46~#25 (EQ. SPCD.)-MK20202 (23 TOP & 23 BOT.) ALTERNATE PLACING WITH MK-20203 TO STAGGER LAP.
114-#25 (EQ. SPCD.)-MK 20201 (57 TOP & 57 BOT.)
80 (TYP.)
38 H.P. GROUT
25 L.P. GROUT
50 CLR.
80 CLR.
458
200

SECTION A-A

127
38
165
485
353
1009

4572
+15
4587

4587

50
38
88

288
458
365
1111

1111
1043
68

1158

1107

GENERAL NOTES:

1. FOR CONCRETE GENERAL NOTES SEE DRAWING 9211-104-FD-200
2. ALL DIMENSIONS ARE IN MILLIMETERS.
3. HIGH POINT FINISHED SURFACE (H.P.F.S.) = DATUM ELEV. 0.00 M. H.P.F.S. IS 15.51 METERS ABOVE MEAN SEA LEVEL.
4. FILL BELOW FOUNDATION TO BE WELL COMPACTED GRAVEL, COARSE SAND OR OTHER STABLE MATERIAL.
5. CONCRETE FOR FOUNDATION TO BE CLASS "A".
6. GROUT QUANTITY TO BE MEASURED IN FIELD.

ESTIMATED MATERIAL		REVISION			
		0	1	2	3
CONCRETE	(M³)	90.6			
BACKFILL	(M³)	47			
25 ϕ ANCHOR BOLTS	(EA.)	36			
76 ϕ × 254 LG. BOLT SLEEVES	EA.	36			
REBAR	(METRIC TONS)	5.8			

REFERENCE DRAWINGS

9211-104-FD-200	CONCRETE GENERAL NOTES
9211-104-FD-201	FOUNDATION LOCATION PLAN
B-9211-104-FD-220	REBAR SCHED. FOR DRIERS 4-DI-A,B&C FOUNDATION
9211-104-SD-207	ANCHOR BOLT DETAILS

APPROVED A.I.O.C. HOUSTON

REV	DATE	DESCRIPTION	BY	CHECKED	DESIGNED	APPROVED
2	6/30	REVISED PER VENDOR DRWGS				MMS
1	6/17/81	ISSUED FOR CONSTRUCTION				MMS
H1	5/29/81	APPROVED FROM A.I.O.C.	RNS	D.L.D.	E.F.	
H0	5/22/81	ISSUED FOR APPROVAL	RNS	D.L.D.	E.F.	

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ISSUED FOR CONSTRUCTION
BY MMS
DATE 6/17/81

CUSTOMER APPROVAL

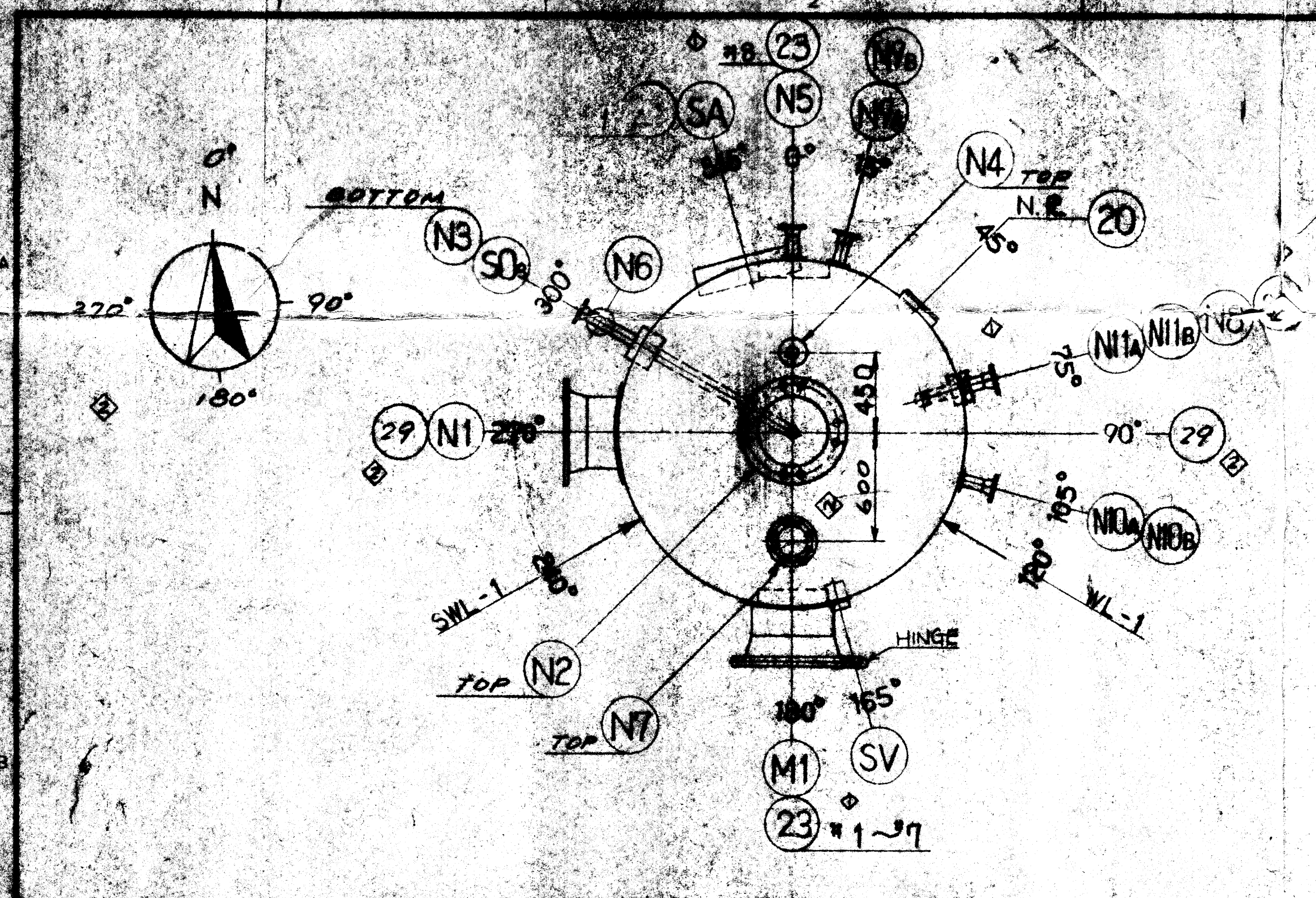
DESIGNED	DRAWN	REVIEWED	APPROVED
E.F.	R. SUTTON	D.L.D.	

FOR EGPC لأجل
AT RAS SHUKHEIR الموقع

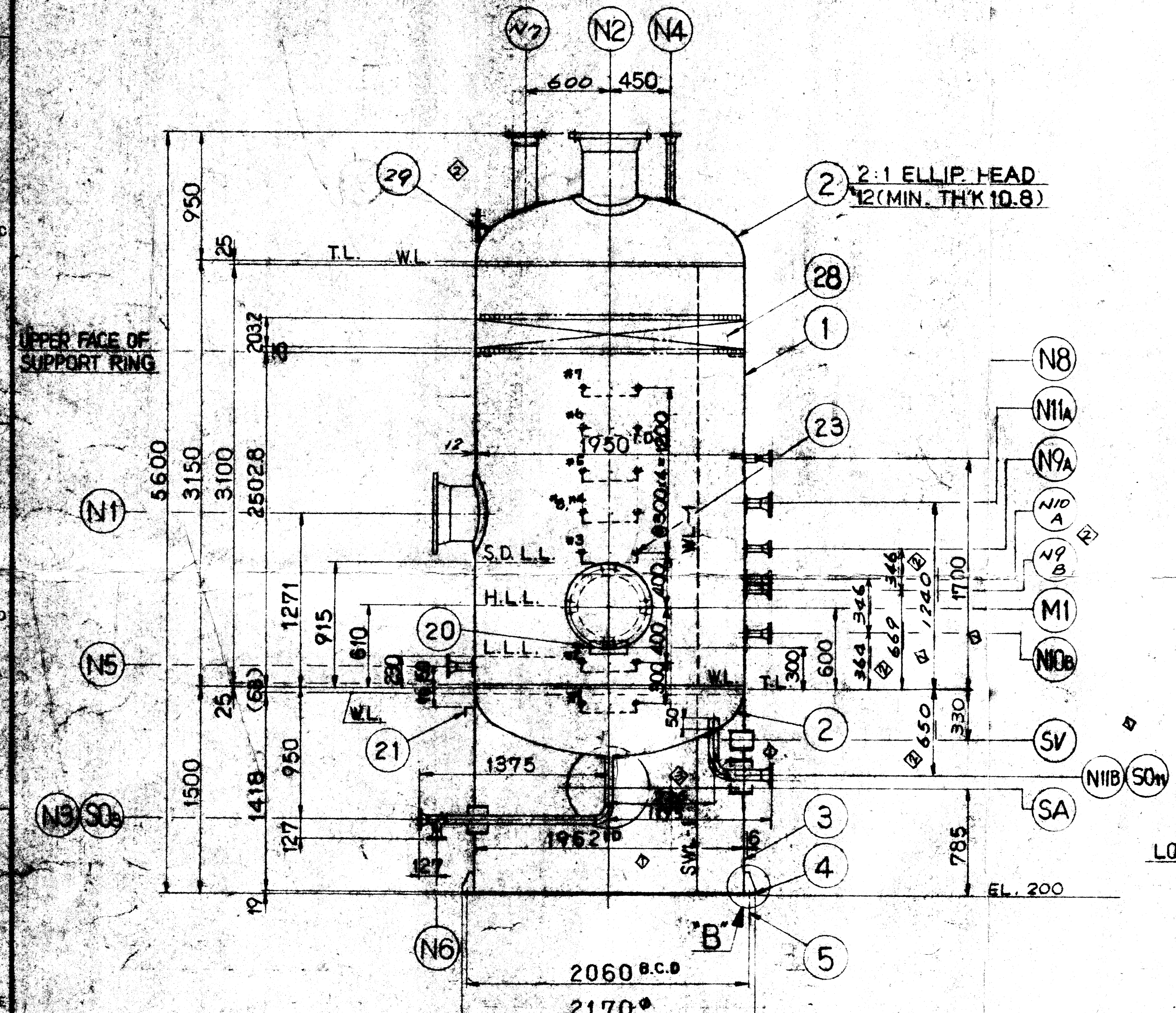
GULF OF SUEZ GAS PROJECT
GAS SWEETENING UNIT
AREA 3F & 3H STRUCTURAL
FDN. FOR DEHYDRATORS 4-DI A,B & C

الشركة الهندسية للصناعات البترولية والكيماوية
Enppi إنبى
ENGINEERING FOR THE PETROLEUM AND PROCESS INDUSTRIES

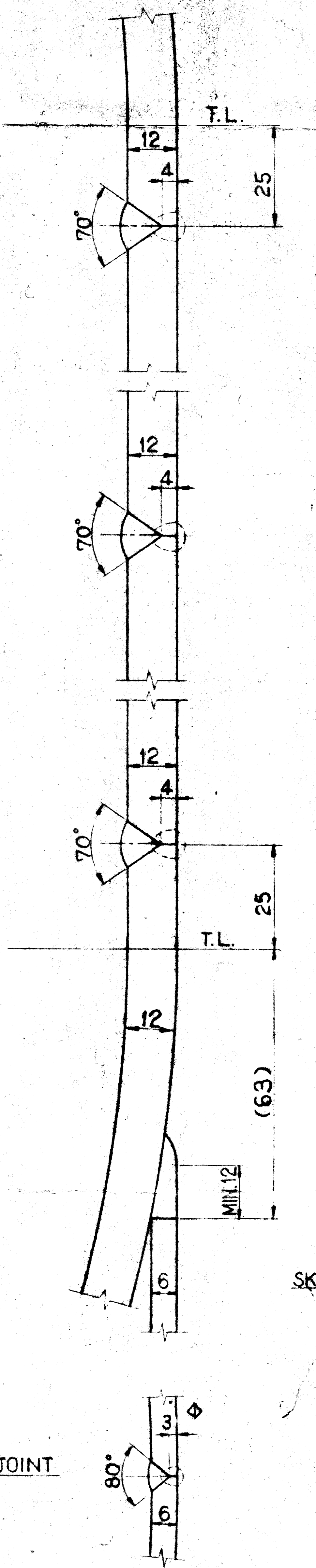
SCALE 1:33⅓
DATE 5-20-81
DRAWING NUMBER 9211-104-FD-202
REVISION 2



NOZZLE ORIENTATION (S=1/30)



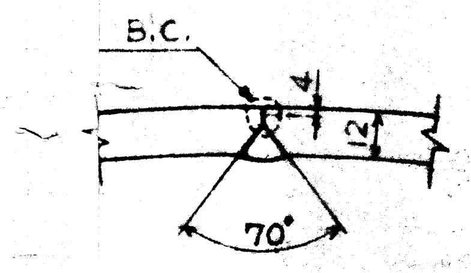
ASSEMBLY (S=1/30)



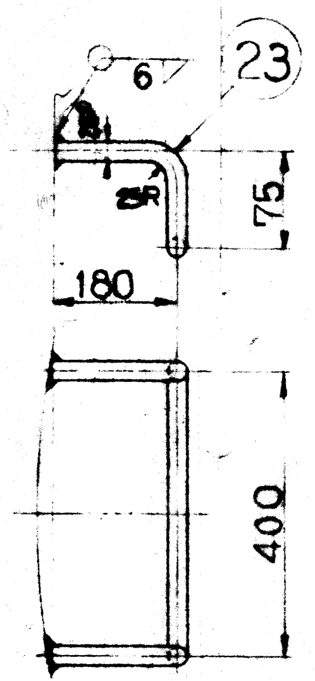
LONGI. JOINT

LONGI. JOINT

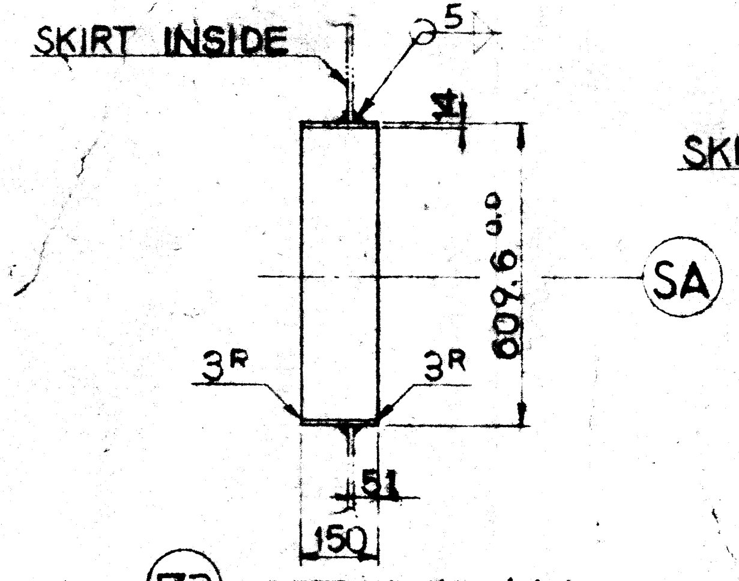
WELDING DETAIL (S=1/1)



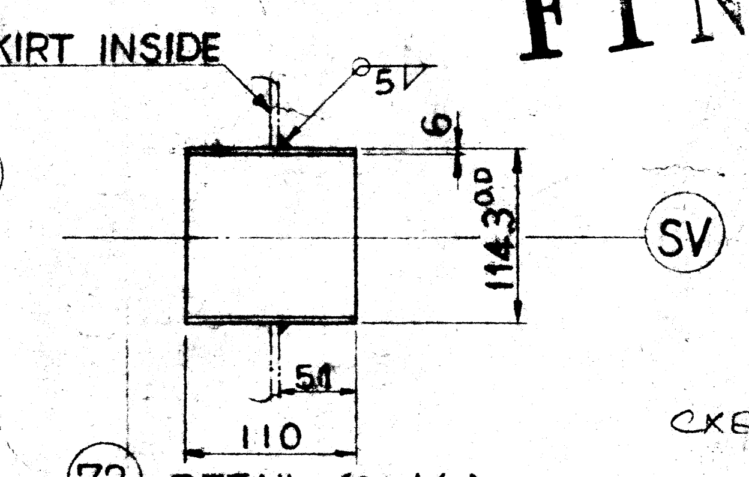
LONGI JOINT FOR N1 & N2 NOZZ.



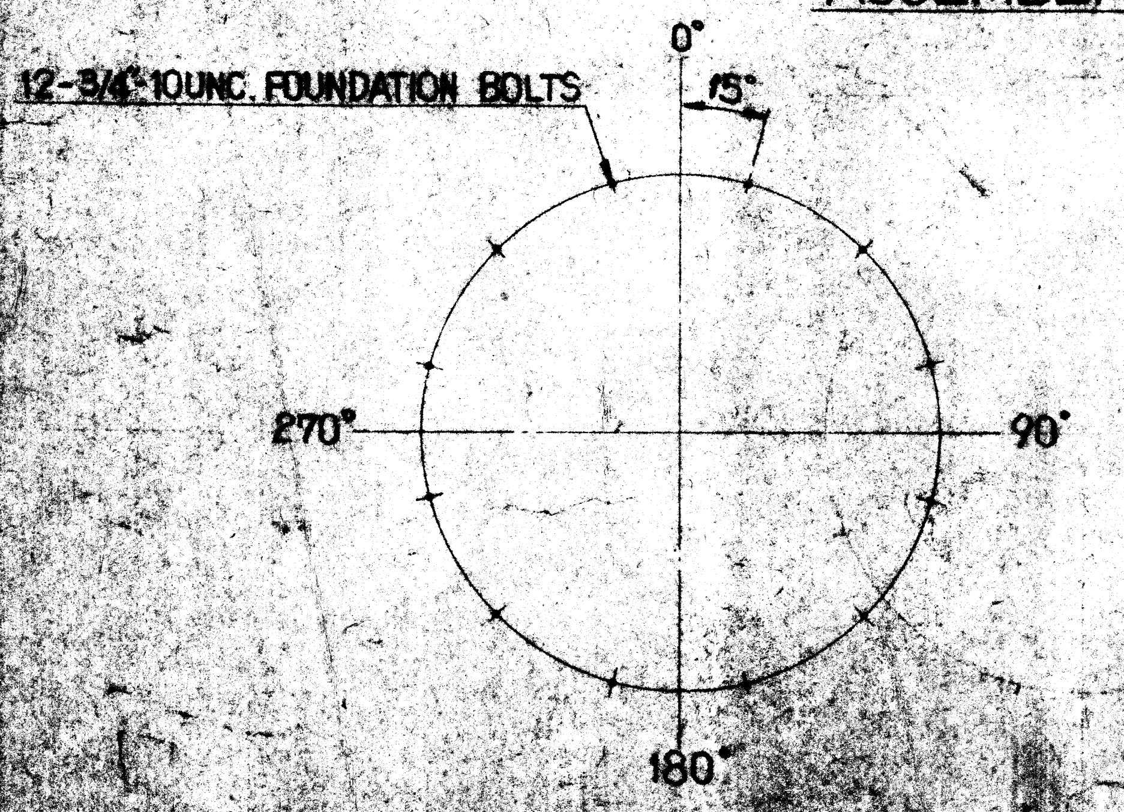
23 DETAIL (S=1/8)



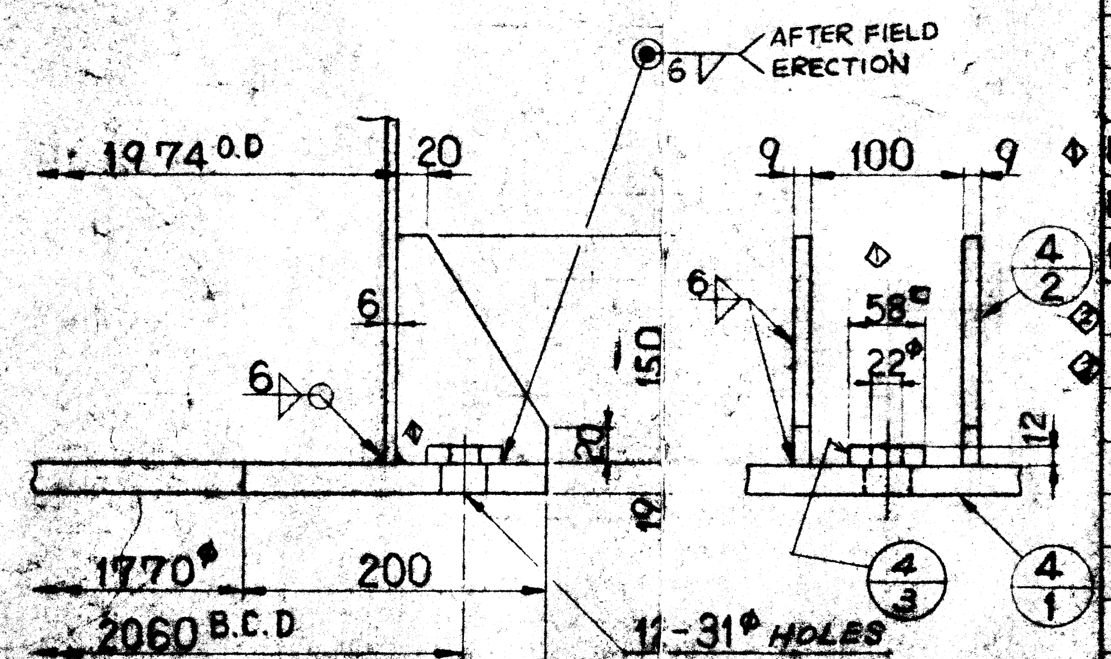
73 DETAIL (S=1/5)



72 DETAIL (S=1/5)



ANCHOR BOLT LOCATION (S=1/30)



DETAIL 'B' (S=1/5)

NOTES.

1. APPLICABLE CODE
   ASME BOILER AND PRESSURE VESSEL CODE SECTION VIII DIVISION 1, 1977 EDITION INCLUDING 1979 SUMMER ADDENDA.
2. WELDING MATERIAL
   - (1) SMAW - SFA5.1 E-7016 - TRADE NAME LB-52
   - (2) GTAW - ---------- - TRADE NAME TGS-50
   - (3) SAW - SFA5.17 F76-EH14- TRADE NAME MF38-US36
3. RADIOGRAPHIC EXAMINATION FOR WELD
   IN ADDITION TO SPOT RADIOGRAPHY PER UW-11(b), HEAD TO SHELL JOINT SHALL BE PARTIALLY RADIOGRAPHED PER UW-11(a)(5)(b).
4. WELD HARDNESS
   - (1) HARDNESS TEST SHALL BE CARRIED OUT AND HARDNESSES SHALL NOT EXCEED HB 200.
   - (2) THE NUMBER AND LOCATION OF HARDNESS TEST SHALL BE AS FOLLOWS.
     - ONE FOR EACH 10 FEETS, OR FRACTION THEREOF, FOR EACH LONGITUDINAL SEAM.
     - ONE FOR EACH 10 FEETS, OR FRACTION THEREOF, FOR EACH CIRCUMFERENTIAL SEAM.
     - ONE FOR EACH NOZZLE TO SHELL WELD
     - ONE FOR EACH AREA WHERE TEMPORARY WELD WAS REMOVED.
     - LOCATION TO BE TESTED SHALL BE AT OR NEAR THE CENTER OF THE WELD.
     - SURFACE TO BE TESTED SHALL BE ON THE SIDE EXPOSED TO THE PROCESS ENVIRONMENT. WHERE NOT PRACTICAL, TEST SHALL BE MADE ON THE OPPOSITE SIDE.
5. VESSEL AND ITS SUPPORT ARE CAPABLE OF A FIELD HYDROSTATIC TEST.
6. EXTERNAL ATTACHMENTS WHOSE WELD CROSS VESSEL SEAM SHALL BE CUT OUT LOCALLY SO AS TO AVOID INTERSECTION OF EACH WELDS.
7. FLANGE BOLT HOLES SHALL STRADDLE THE VERTICAL OR EAST-WEST, NORTH-SOUTH HORIZONTAL CENTER LINES.
8. GASKET SURFACE SHALL HAVE A SERRATED FACING FINISH IN ACCORDANCE WITH ANSI B16.5.
9. HYDROSTATIC PRESSURE TEST
   - (1) HYDROSTATIC PRESSURE TEST SHALL BE CARRIED OUT IN ACCORDANCE WITH UG-99(b) OF ASME SECT.VIII DIV.1.
   - (2) TEST PRESSURE SHALL BE MAINTAINED FOR A PERIOD OF NOT LESS THAN HALF AN HOUR.
   - (3) CHLORIDE CONTENTS OF WATER SHALL NOT EXCEED 3000PPM.
10. LEAKAGE TEST
    - (1) ALL REINFORCING PAD WELDS FOR NOZZLES SHALL BE CHECKED FOR LEAK WITH MINIMUM AIR PRESSURE OF 1 KG/CM^{2}G (15 PSIG)
    - (2) TEST HOLES ON REINFORCING PAD SHALL BE FILLED WITH STIFF GREASE AFTER HYDROSTATIC TESTING.
11. FABRICATION TOLERANCE SHALL BE IN ACCORDANCE WITH C.F. BRAUN'S SPECIFICATION 9211-100-100-7.
12. SHOP PAINTING
    SEE DWG. NO. C-8025674
13. DEMISTER SHALL BE ASSEMBLED AT SHOP BEFORE SHIPPING.
14. QUANTITIES LISTED ARE FOR ONE VESSEL.
    TOTAL REQUIRED - 3 VESSELS
15. SUPPORT SKIRT
    - (1) WELDING APPLICATION FOR CIRCUMFERENTIAL AND LONGITUDINAL SEAMS OF THE SKIRT SHELL SHALL BE SAW.
    - (2) SPOT RADIOGRAPHY SHALL BE MADE OF EACH INTERSECTION OF CIRCUMFERENTIAL AND LONGITUDINAL SHELL SEAM. IN ADDITION, ONE RADIOGRAPH SHALL BE TAKEN FOR EACH 15 METER (50 FEETS) OF WELD AT LOCATION CHOSEN BY THE CUSTOMER'S INSPECTOR. ~~RADIOGRAPHY SHALL COMPLY WITH ASME SECT. VIII PAR. UW-52 WITH~~ INTERPRETATION COMPLYING WITH UW-51.

NO.	DESCRIPTION	MATL.	QUANT.	REMARKS
1	SHELL PLATE	SA285 Gr.C	1	
2	HEAD PLATE	SA285 Gr.C	2	
3	SKIRT PLATE	SA285 Gr.C	1	
4	BASE BLOCK	—	1 SET	
-1	BASE PLATE	SS41	1	
-2	GUSSET	↓	24	
-3	WASHER	↓	12	
5	ANCHOR BOLT & HEAVY NUT	SS41	12 SETS	3/4-10U
[illegible]	NAME PLATE	[illegible]	1 SET	
21	FIREPROOFING SEAL	C.S	1 SET	
23	INTERNAL RUNG	A36	8	#1~#8
24	EATH PIECE	SUS304	1	
[illegible]	PLATFORM & LADDER CLIP	SA285 Gr.C	1 SET	
28	DEMISTER & DEMISTER SUPPORT RING	[illegible]	1 SET	
29	LIFTING LUG	SA285 Gr.C	1 SET	

MARUZEN ENGINEERING INC.
APRIL 14, 1981
GULF OF SUEZ GAS PROJECT

FINAL

U

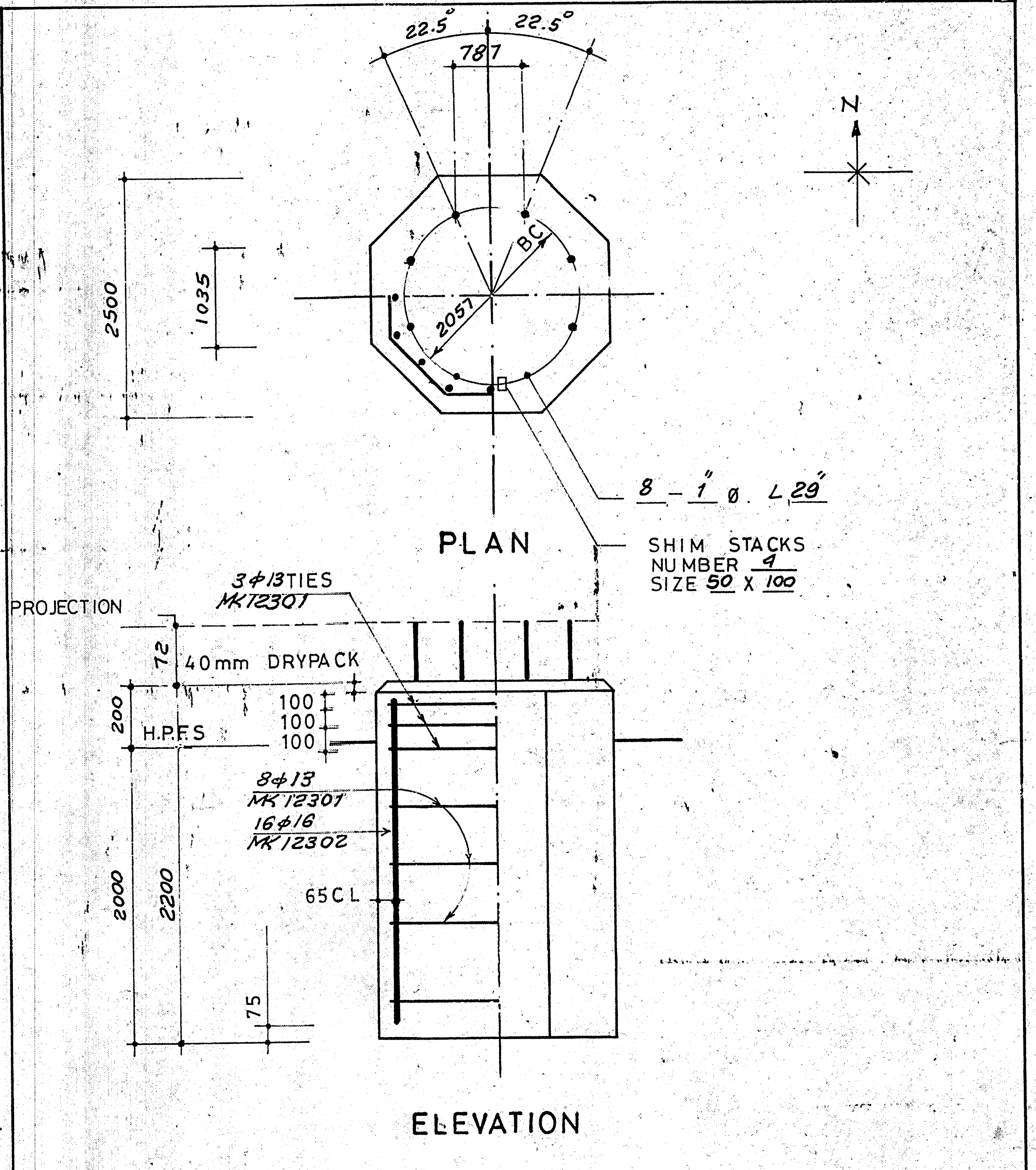
QA REVIEW		
REV NO.	DATE	SIGNED
0	AUG. 12, '80	
1	OCT. 7, '80	
2	DEC. 5, '80	
3	JAN. 27, '81	

CXE 340

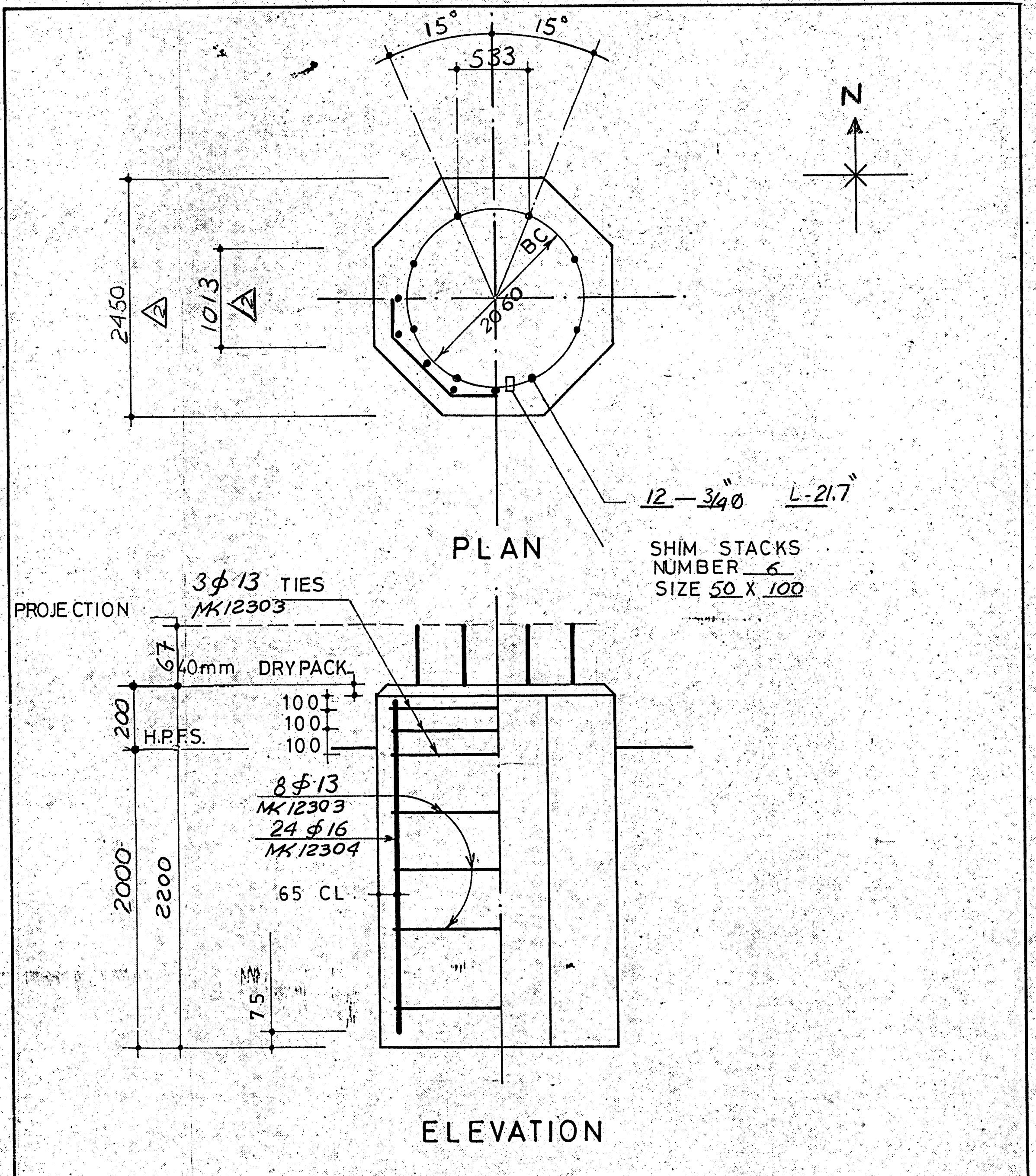
DESIGN DATA	
REGULATION	—
CODE	ASME SECT. VIII DIV.1 1977 EDITION UP TO 1979 SUMMER ADDENDA
SPECIFICATION	—
FLUID NAME	LIGHT HYDROCARBON GAS
OPERATING PRESSURE	0.9 kgf/cm²G
OPERATING TEMPERATURE	30 °C
DESIGN PRESSURE	2.9 & F.V. kgf/cm²G
DESIGN TEMPERATURE	60 °C
RADIOGRAPH SHELL/HEAD	SPOT (SEE NOTE 3)
JOINT TYPE	DOUBLE WELDED BUTT JOINT
JOINT EFFICIENCY SHELL/HEAD	85/100 %
CORROSION ALLOWANCE	3.0 mm
POSTWELD HEAT TREATMENT	NO
HYDRAULIC TEST PRESSURE	4.4 kgf/cm²G
PNEUMATIC TEST PRESSURE	— kgf/cm²G
SHIPPING WEIGHT	3500 kgf
OPERATING WEIGHT	10500 kgf
INTERNALS WEIGHT	— kgf
EXTERNALS WEIGHT	— kgf
FULL WATER WEIGHT	19200 kgf
VOLUME	11.34 m³
INSULATION	NO
FIRE PROOFING	YES (SKIRT)
NUMBER REQUIRED	3 SET

NOZZLE SCHEDULE

MARK	SIZE	NO. REQ'D	PART NO.	ST'D TYPE NO.	SERVICE	FLANGE RATING	FLANGE MAT'L	NECK SCH NO. TH'K	NECK MAT'L	REINFORCING PL TH'K	REINFORCING PL MAT'L	PROJECT FROM ℄	REMARKS
SO11	6"	1	74	AA-114-B-11D	SKIRT OPEN	—	—	40	STPG38	—	—		
N11B	2"	1	74	AA-114-B-11D	BRIDLE	ANSI 150 WNRF	SA105	160	SA106Gr.B SA234WPB	t12	SA285GrC	1175	
SO3	6"	1	62	AA-115-A-11A	SKIRT OPEN	—	—	40	STPG38	—	—		
SA	24"	1	73	AS SHOWN	SKIRT ACCESS	—	—	t14	SS41	—	—		
SV	4"	1	72	AS SHOWN	SKIRT VENT	—	—	40	STPG38	—	—		
M1	18"	1	71	SEE DWG. NO. B-8025337	MANHOLE	ANSI 150 WN RF	SA105	t12	SA285Gr.C	t12	SA285Gr.C	1275	W/HINGE
N11A	2"	1	70	AA-101-A-11A	BRIDLE	ANSI 150 WNRF	↓	160	SA106Gr.B	t12	SA285Gr.C	1175	
N10A/B	2"	2	69	AA-101-A-11A	LEVEL SWITCH H.	ANSI 150 WN RF		160	SA106Gr.B	t12	SA285Gr.C	1175	
N9A/B	2"	2	68	AA-101-A-11A	LEVEL SWITCH H.H	ANSI 150 WN RF		160	SA106Gr.B	t12	SA285Gr.C	1175	
N8	1"	1	67	AA-310-A-33A	PRESS. INDIC.	ANSI 150 LWN. RF		(XXS)	—	—	—	1175	
N7	6"	1	66	AA-101-B-11A	SAFETY VALVE	ANSI 150 WN RF		80	SA106Gr.B	t12	SA285Gr.C	AS SHOWN	
N6	2"	1	62	AA-115-A-11A	DRAIN	↓		(160)	—	—	—	AS SHOWN	
N5	1½"	1	64	AA-101-A-11A	UTILITY			160	SA106Gr.B	t12	SA285Gr.C	1175	
N4	1½"	1	63	AA-101-B-11A	VENT			↕	SA106Gr.B	↑	↑	AS SHOWN	
N3	2"	1	62	AA-115-A-11A	COND. OUTLET			160	SA106Gr.B SA234WPB			1375	
N2	16"	1	61	AA-101-A-11A	VAPOR OUTLET	↓	↓	t12	SA285Gr.C	↓	↓	AS SHOWN	REINF. O.D 690φ
N1	16"	1	60	AA-101-A-11A	VAPOR INLET	ANSI 150 WN RF	SA105	t12	SA285Gr.C	t12	SA285Gr.C	1275	

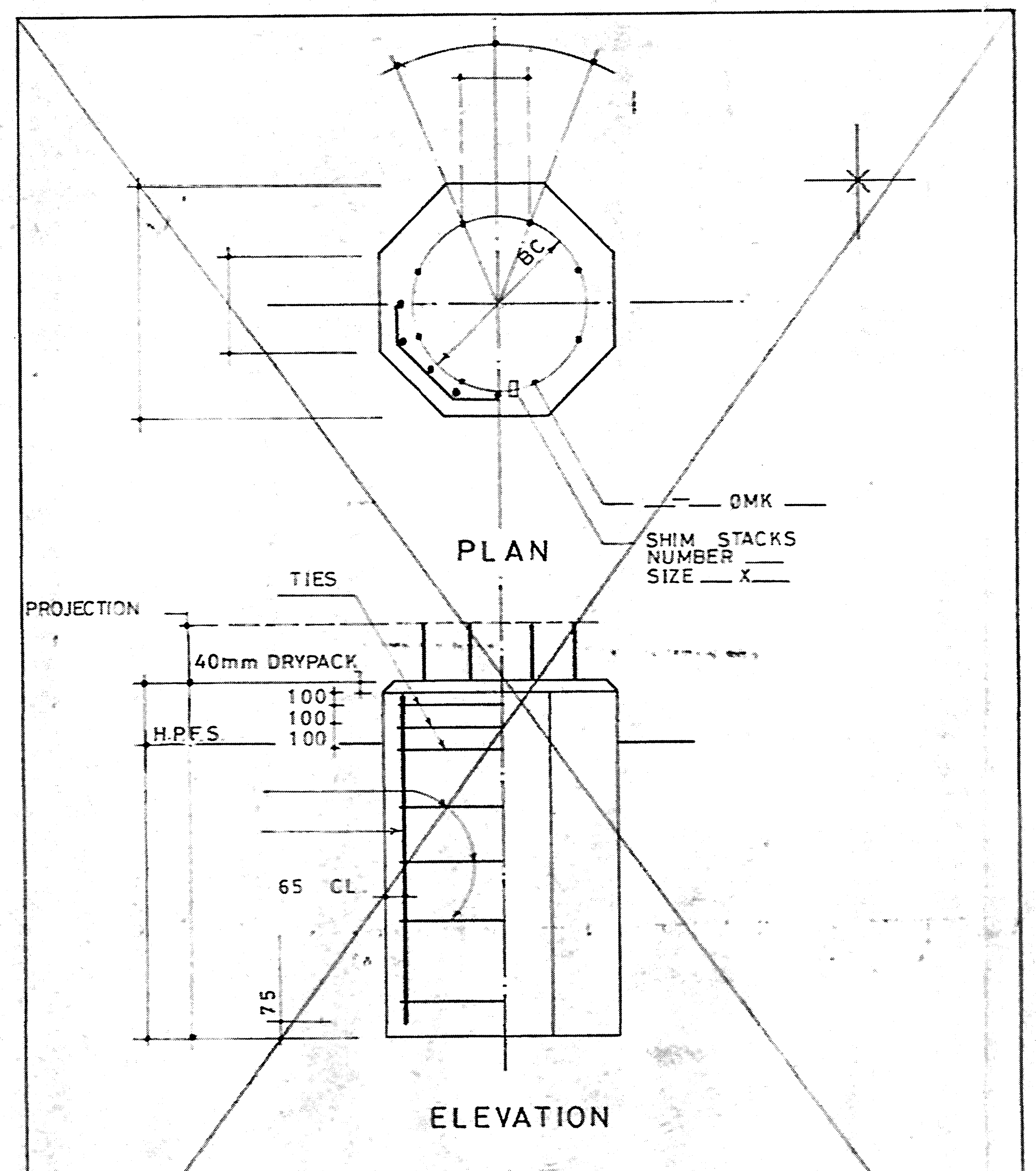


CONCRETE AND REINFORCEMENT	ANCHOR BOLTS AND SHIMS	
PIER 11.5 CU METER 60 Kg OF ø16 & 95 Kg OF ø13	8 – 1" ø L-29" ANCHOR BOLTS – ø – ANCHOR BOLTS 4 SHIM STACKS 50 X 100	
FOR GENERAL NOTES SEE DWG	THIS ITEM CHANGED BY REVISION	2
UNIT 103	ITEM 3-T1	



THESE QUANTITES ARE FOR ONE FOOTING ONLY

CONCRETE AND REINFORCEMENT	ANCHOR BOLTS AND SHIMS	
PIER 10.9 CU METER 85 KG OF ø16 & 40 KG OF ø13	12 – 3/4" ø, L-21.7" ANCHOR BOLTS – ø – ANCHOR BOLTS 6 SHIM STACKS 50 X 100	
FOR GENERAL NOTES SEE DWG	THIS ITEM CHANGED BY REVISION	2
UNIT 103	ITEM 3-V1 A,B,C	



THESE QUANTITIES ARE FOR ONE FOOTING ONLY

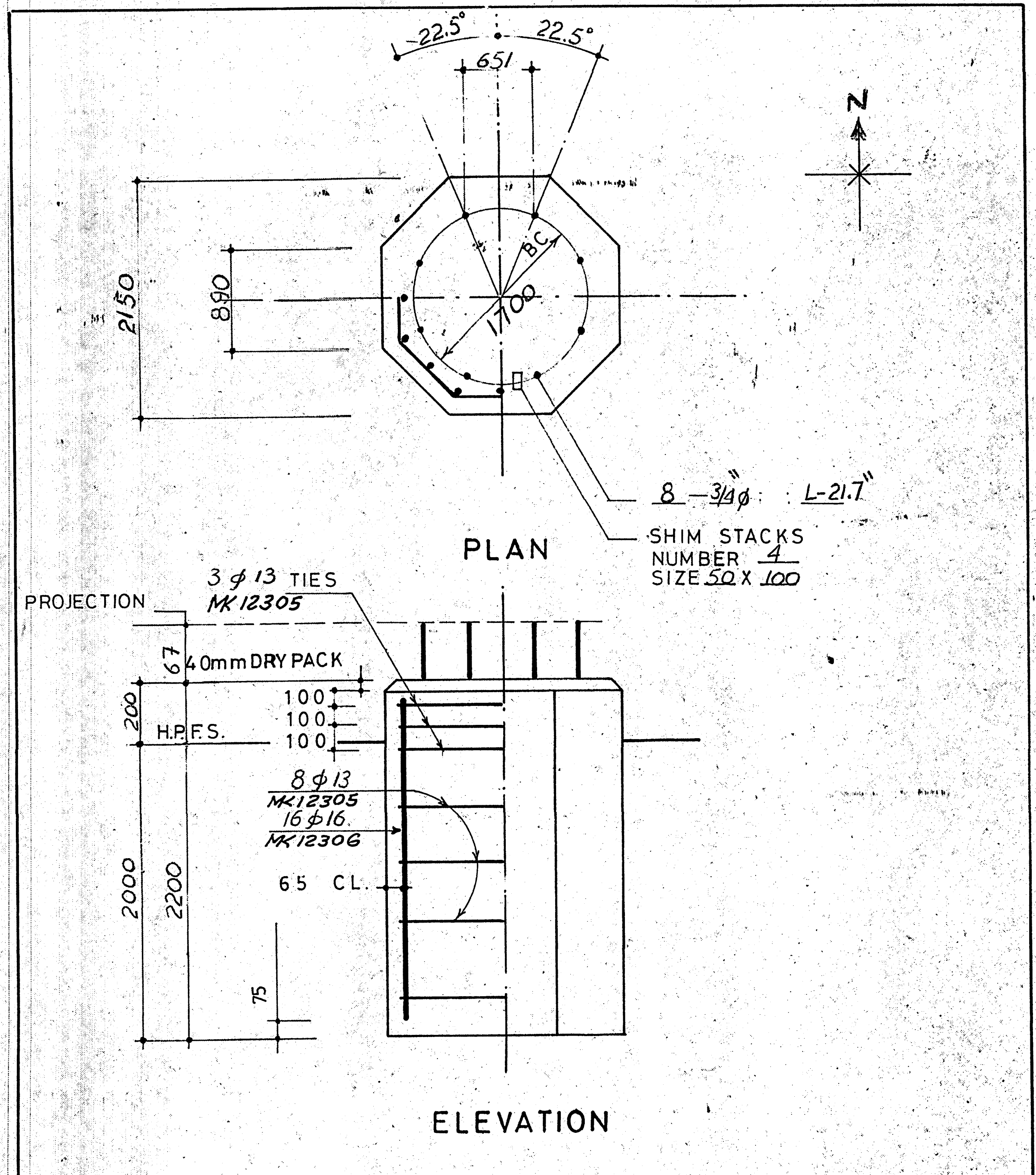
CONCRETE AND REINFORCEMENT	ANCHOR BOLTS AND SHIMS	
PIER CU METER	ø MK ANCHOR BOLTS ø MK ANCHOR BOLTS SHIM STACKS X	
FOR GENERAL NOTES SEE DWG	THIS ITEM CHANGED BY REVISION	
UNIT	ITEM	

NUMBER	REFERENCE
9211-100-300-2	CONCRETE
9211-100-300-6	CONCRETE ACCESSORIES
9211-100-300-7	SHIM AND GROUTING
9211-B-103-FD-123	BARLIST
9211-103-KE.301	PLOT PLAN

GENERAL NOTES

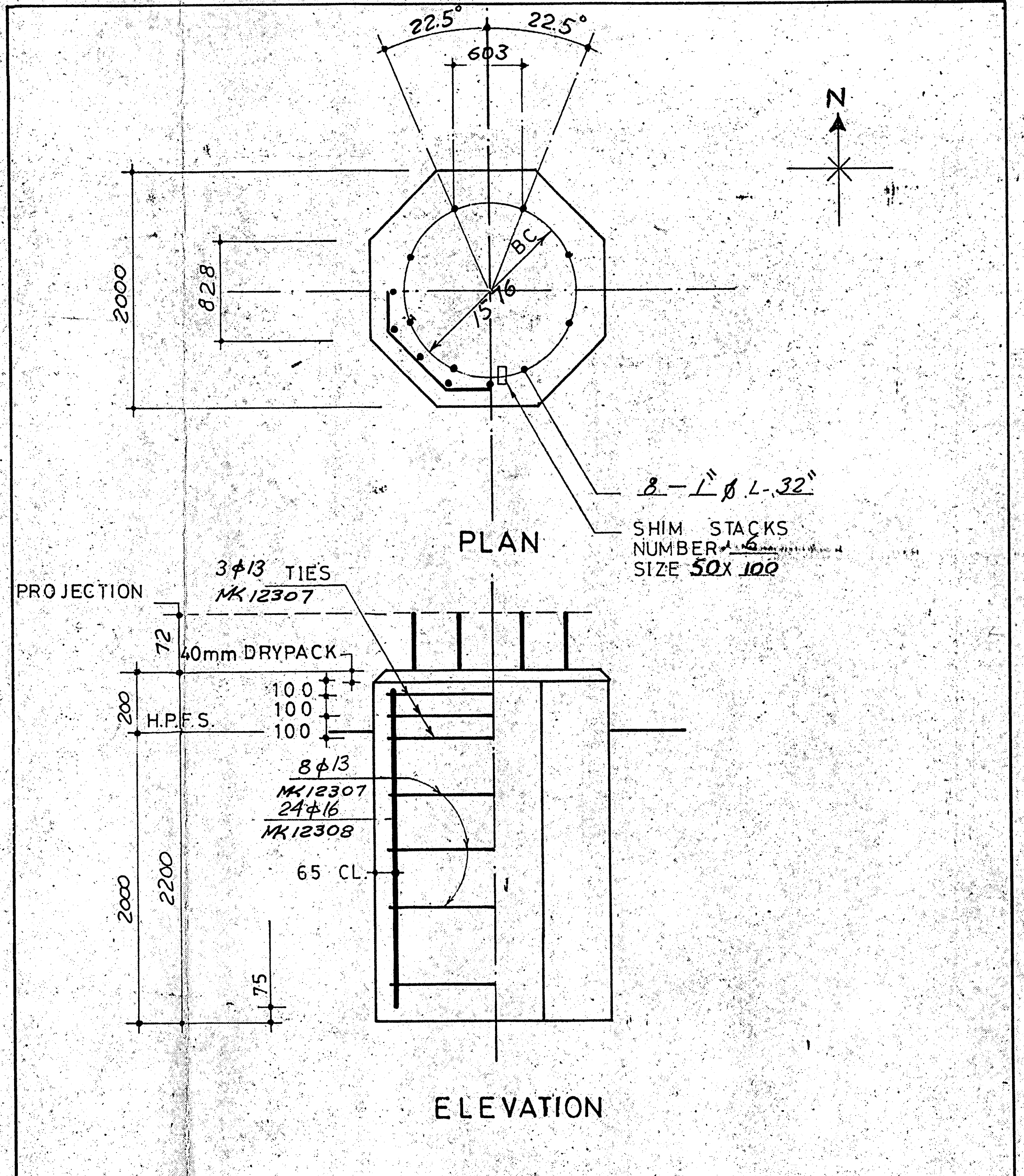
1 _ HIGH POINT FINISHED SURFACE (H.P.F.S.) = ELEV. (
2 _ FOR LOCATION OF FOUNDATIONS SEE DRAWING 92 06
3 _ EACH ITEM FOUNDATION IS ORIENTED BY INDIVIDUA OW
4 _ FOR DETAILS OF ANCHOR BOLTS SEE SPECS 6
5 _ SOIL REPORT SHOULD BE STRICTLY FOLLOWED
6 _ CONCETE FOOTING ARE CLASS "A" CONCRETE USI E RESISTING CEMENT
7 _ CONCRETE, FOOTINGS TO BE UNDERLAID BY 100 M CONCRETE BLINDING

ESTIMATED MATERIAL	REVI			
	0	1	2	
RC (M³)	80	+17	0	
REINFORCING BARS (TON)	1.3	+0.15	0	
3/4" L-21.7" ANCH BOLTS	80	+20	0	
50X100 M.M SHIM STACKS	42	+10	0	
1" L-29" ANCH-BOLTS	0	+0	+2	
1" L-32" ANCH BOLTS	0	0	0	

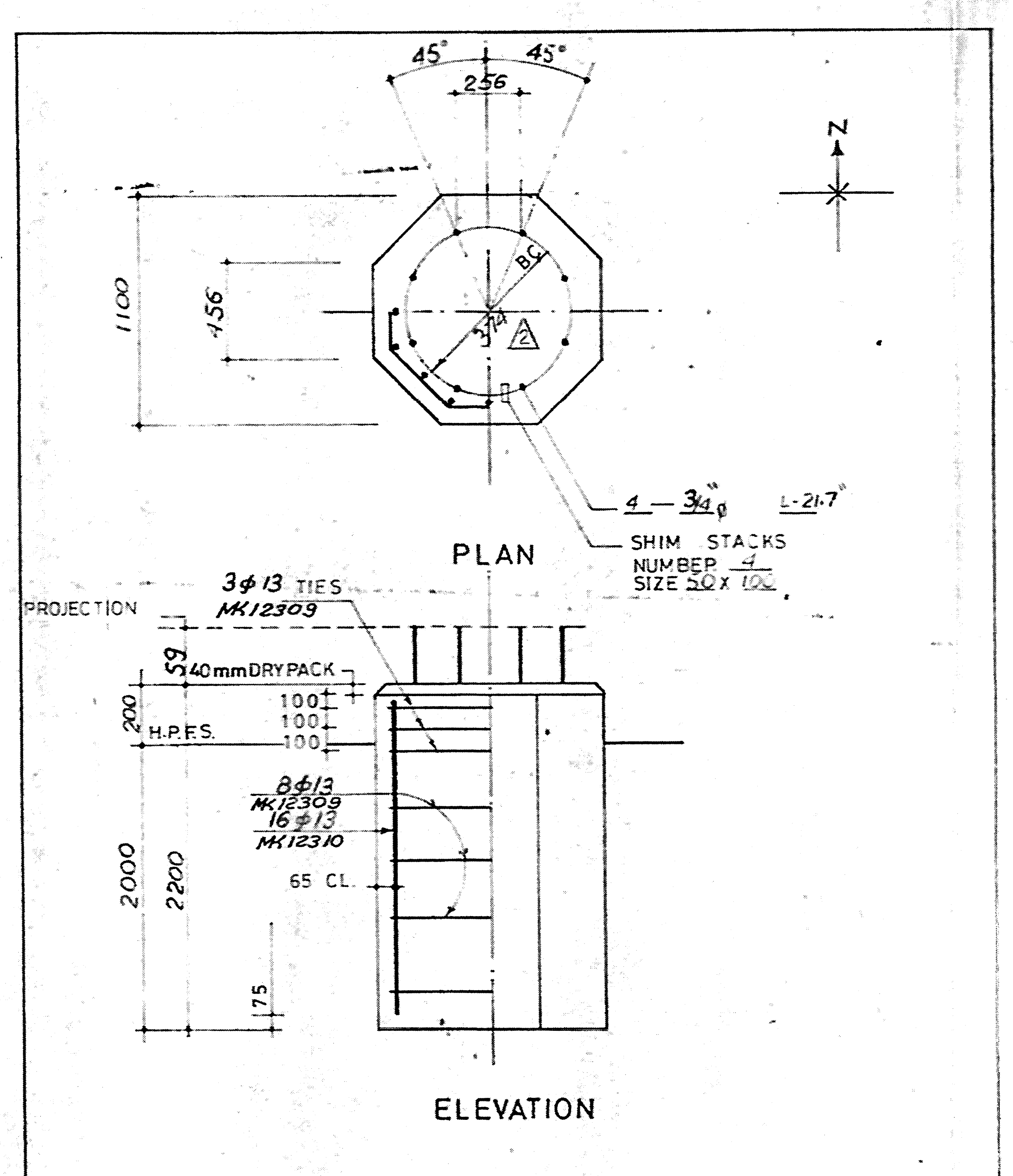


THESE QUANTITIES ARE FOR ONE FOOTING ONLY

CONCRETE AND REINFORCEMENT	ANCHOR BOLTS AND SHIMS	
PIER 8.40 CU METER 60 KG OF ø16 & 80 KG OF ø13	8 – 3/4" ø L-21.7" ANCHOR BOLTS – ø – ANCHOR BOLTS 4 SHIM STACKS 50 X 100	
FOR GENERAL NOTES SEE DWG	THIS ITEM CHANGED BY REVISION	2
UNIT 103	ITEM 3-V3 A,B,C	



CONCRETE AND REINFORCEMENT	ANCHOR BOLTS AND SHIMS	
PIER 1.2 CU METER 90 KG OF ø16 & 100 KG OF ø13	8 – 1" ø L-32" ANCHOR BOLTS – ø – ANCHOR BOLTS 6 SHIM STACKS 50 X 100	
FOR GENERAL NOTES SEE DWG	THIS ITEM CHANGED BY REVISION	3
UNIT 103	ITEM 3-V4 A,B,C	



CONCRETE AND REINFORCEMENT	ANCHOR BOLTS AND SHIMS	
PIER 2.20 CU METER 80 KG OF ø13	4 – 3/4" ø L-21.7" ANCHOR BOLTS – ø – ANCHOR BOLTS 4 SHIM STACKS 50 X 100	
FOR GENERAL NOTES SEE DWG	THIS ITEM CHANGED BY REVISION	
UNIT 103	ITEM 3-V7	

3	8-12-8	3-V4 WAS CHANGED	N.H	M.	S
2		REVISED AS SHOWN		M.	1S
		ISSUED FOR CONSTRUCTION		M.	S
0	11-11-80	ISSUED FOR APPROVAL	N.H	M.	S
REV	DATE	DESCRIPTION	B	CHECK	VED

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CONSENT NOR BE USED IN ANY WAY DETRIMENTAL TO THE INTEREST OF ENPPI

ISSUED FOR CONSTRUCTION BY M.S DATE 12-25-84	CUSTOMER APPROVAL

DESIGNED	DRAWN	REVIEWED
M. H	N. HALIM	M. K

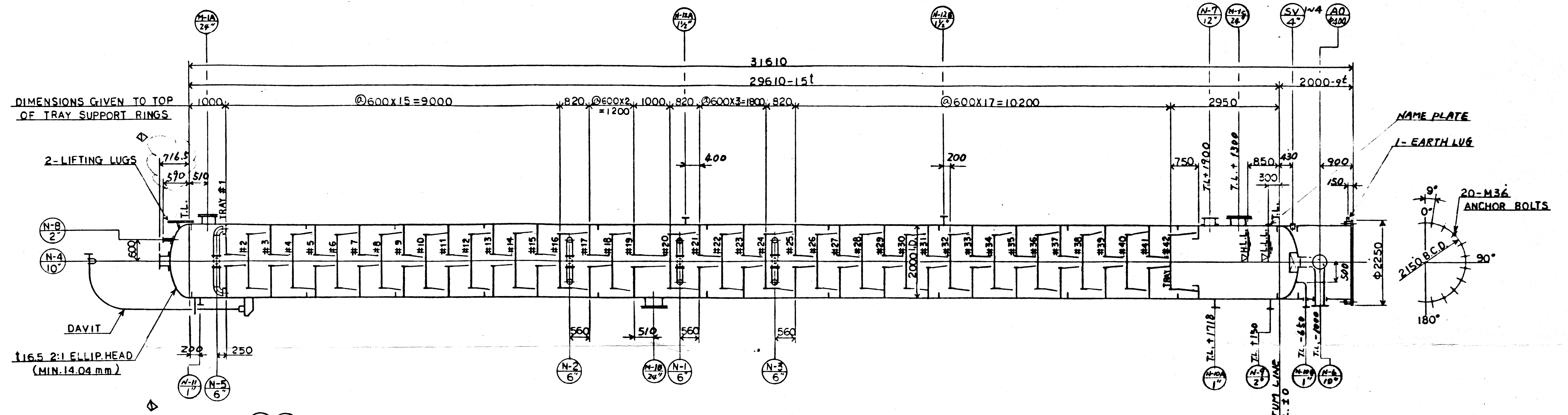
FOR E.G.P.C
AT RAS SHUKHEIR

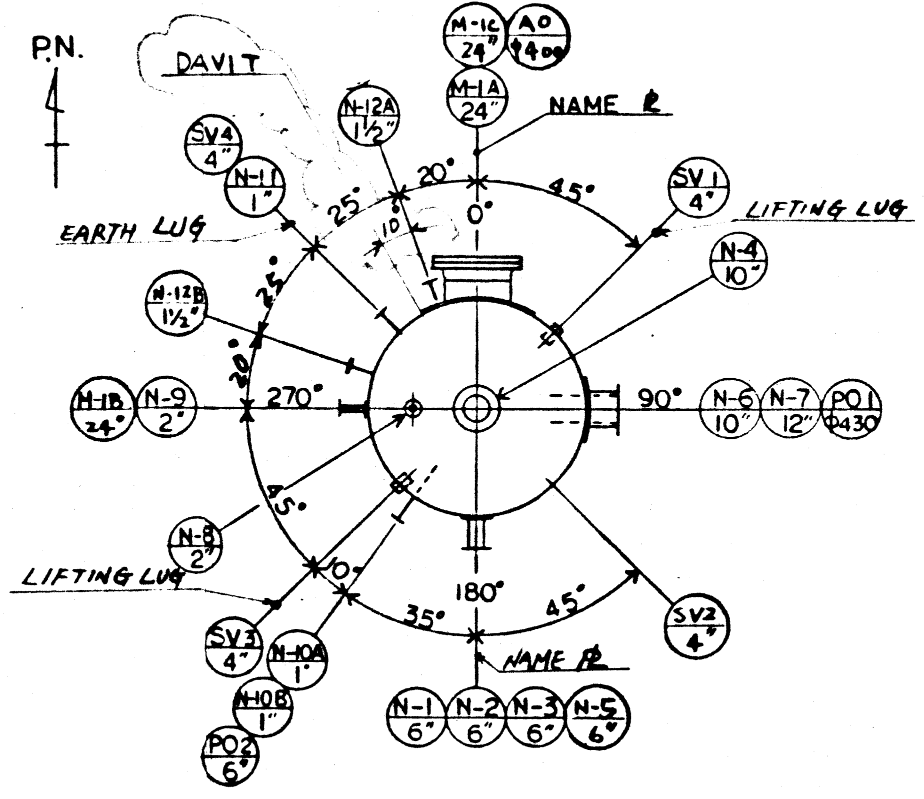
GULF OF SUEZ GAS PRO.
GUPCO GAS GATHERING STA
VERTICAL VESSEL FOUNDA
3V

الهندسية للصناعات البترولية والكيماوية
Enppi
ENGINEERING FOR THE PETROLEUM AND PROCESS I

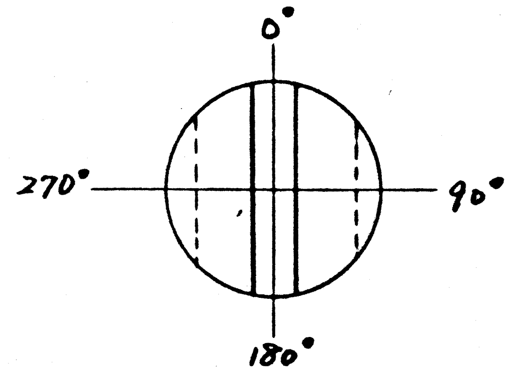
SCALE	DRAWING NUMBER
NONE	9211-103-FD-1
DATE 11-11-1980	

NO SCALE
PROJECTION

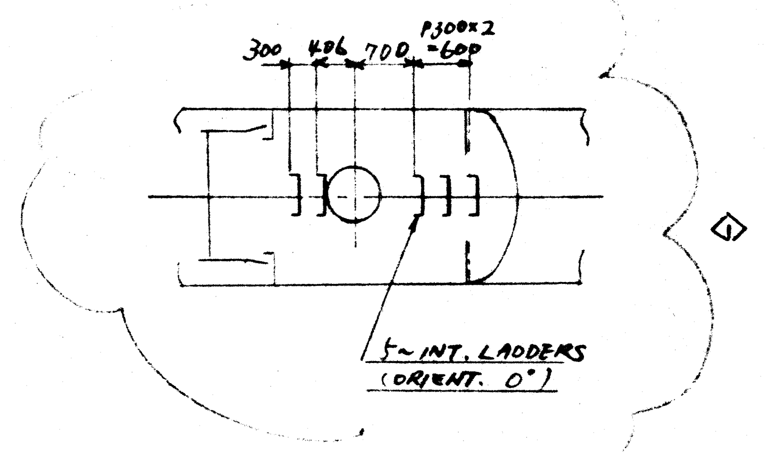




NOZZLE ORIENTATION



TRAY ORIENTATION



APPROVED
Date Dec. 27. '85
By. N.O.
HITACHI ZOSEN CORPORATION
PIPING EQUIPMENT DESIGN
ENGINEERING DEPARTMENT

NOZZLE LIST

MARK	SIZE	NO. OF REQ'D	ANSI STD RATING	TYPE	FACING	SCH (TH'K)	SERVICE	PROJECTION TO ℄	PROJECTION TO FACE	REMARKS
SV 1~4	4"	4	—	—	—	40	SKIRT VENT			
PO 2	6"	1	—	—	—	40	PIPE OPENING			
PO 1	Φ430	1	—	—	—	t9	PIPE OPENING			
AO	Φ400	1	—	—	—	t9	ACCESS HOLE			
M-1 A B C	24"	3	150	WN	RF	t9	MANHOLE			W/HINGE
N-12 A B	1½"	2	300	↑	↑	XXS	TE			
N-11	1"	1	↕			↕	PI			
N-10 A B	1"	2	300			XXS	LG			
N-9	2"	1	150			160	PURGE			
N-8	2"	1	↑			160	VENT			
N-7	12"	1				80	VAPOR INLET			
N-6	10"	1				↑	LIQUID OUTLET			
N-5	6"	1					REFLUX			
N-4	10"	1					VAPOR OUTLET			
N-3	6"	1					VAPOR LIQUID INLET			
N-2	6"	1	↓	↓	↓	↓	VAPOR LIQUID INLET			
N-1	6"	1	150	WN	RF	80	VAPOR LIQUID INLET			

REV.	DESCRIPTION	DATE	APPROVE	CHECK	DRAWN
◇					
◇					
◇					
◇					
◇					
◇					
◇1	Add & change dimensions	Mar. 6 1986			N.O.

LIST OF REFERENCE DRAWINGS

TITLE	DRAWING NO.
TEMPLATE & ANCHOR BOLT	TS-1331-15
PLATFORM (4/4)	-14
(3/4)	-13
(2/4)	-12
PLATFORM (1/4)	-11
TOP DAVIT	-10
INSULATION SUPPORT RING	-09
PIPE SUPPORT LUG	-08
TRAY SUPPORT RING (2/2)	-07
TRAY SUPPORT RING (1/2)	-06
MANHOLE	-05
NOZZLE (2/2)	-04
NOZZLE (1/2)	-03
BODY	TS-1331-02

DESIGN DATA	
CODE/REGULATION	ASME SEC.VIII DIV.1 1983 EDIT. UP TO & INCLUD. 1984 WINTER
NO. REQ'D	1 (ONE)
VOLUME	m³
DESIGN PRESSURE	11.5 kg/cm²G
DESIGN TEMPERATURE	165 ℃
OPERATING PRESSURE	8.4 kg/cm²G
OPERATING TEMPERATURE	131.9 ℃
HYDRO. TEST PRESSURE	17.3 kg/cm²G
PNEUMA. TEST PRESSURE	— kg/cm²G
POST WELD HEAT TREATMENT	NONE
RADIOGRAPHED	SPOT
JOINT EFFICIENCY	SHELL 0.85 HEAD 1.0
CORR. ALLOWANCE	3.0 mm
INSULATION HOT	NO [✓ YES] (30 mm)
FIRE PROOF	NO [✓ YES] (50 mm)
PAINTING	BY SPEC.
ACCESSORY	
SPARE	GASKET 200% B.N. 20%
WEIGHT : EMPTY	kg
WEIGHT : OPERATING	kg
WEIGHT : FULL WATER	kg

PART NO.	DESIGNATION	MATERIAL	MILL SHEET	QUANT	TOTAL QUANT	REMARKS
5						
4						
3						
2						
1						

U STAMP

Reviewed by QC
Date: Nov. 12 '85
T. Takahashi
TOKUYAMA MACHINERY CO. LTD

TM JOB NO.	85-2180
MFGR'S S/N	TM-0558

Approved By Design Section
Date: Nov. 18. 1985
Manager of Design Section

Code No. DT-T102-40-001

CUSTOMER	HZ / EGPC		
TMC JOB NO.	85-2180		
MICRO		QUANT	1(ONE)
APPR.		DATE	OCT. 23 '85
CHECK	Nov. 13 '85	SCALE	1/60
DRAWN	K. FUJITA	GROUP	

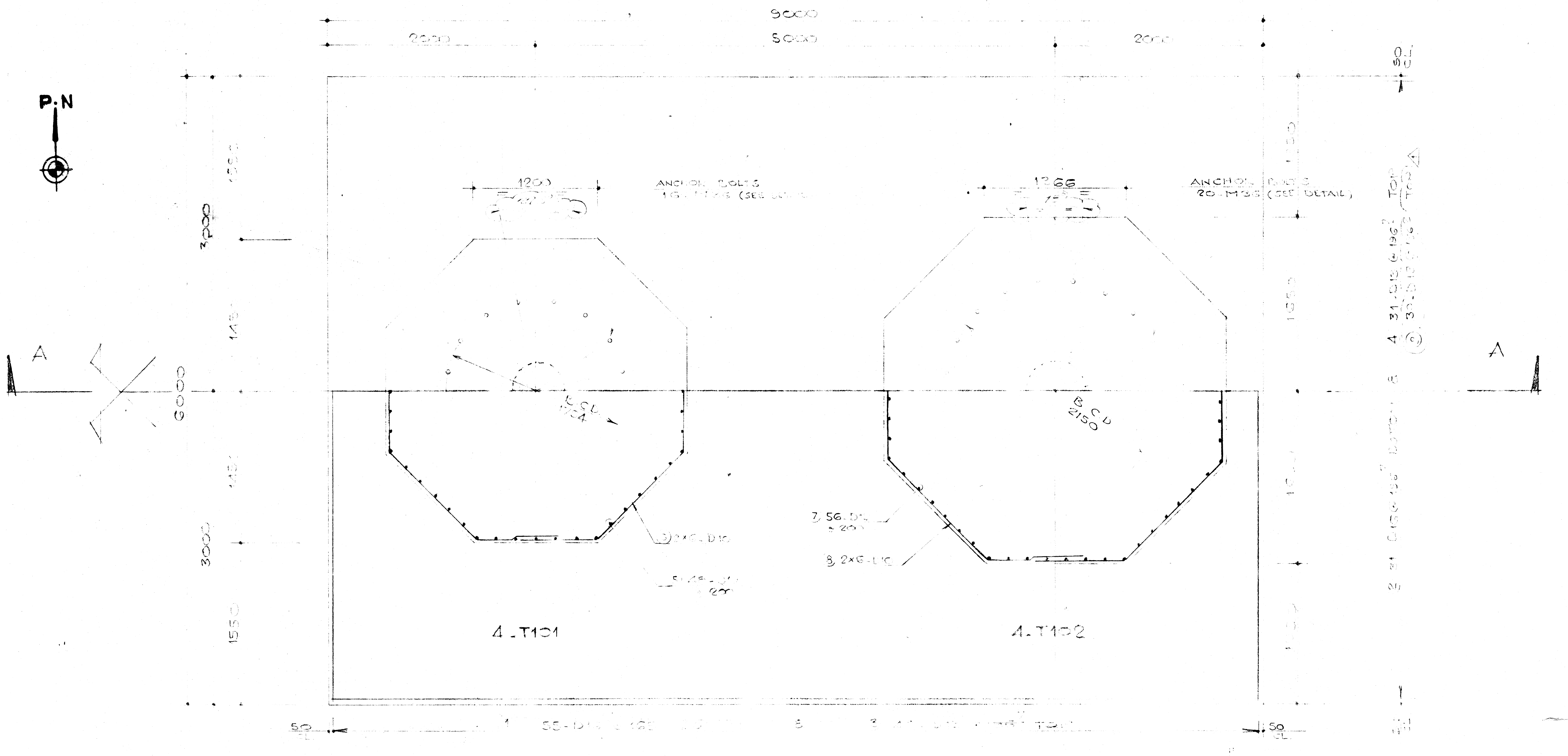
TOKUYAMA MACHINERY CO., LTD.

GULF OF SUEZ GAS PLANT PHASE II

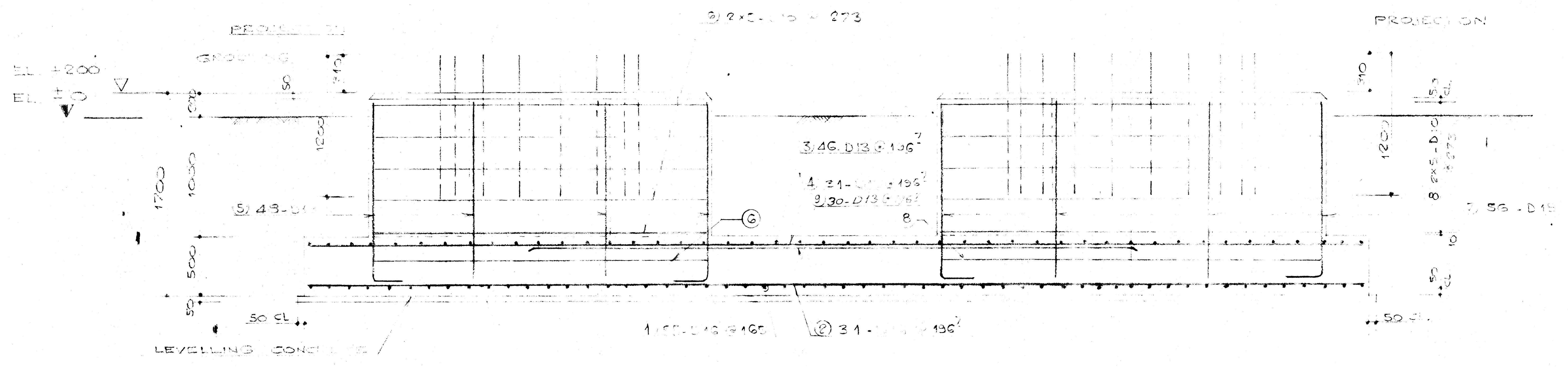
DEBUTANIZER
4-T102

ASSEMBLY DRAWING

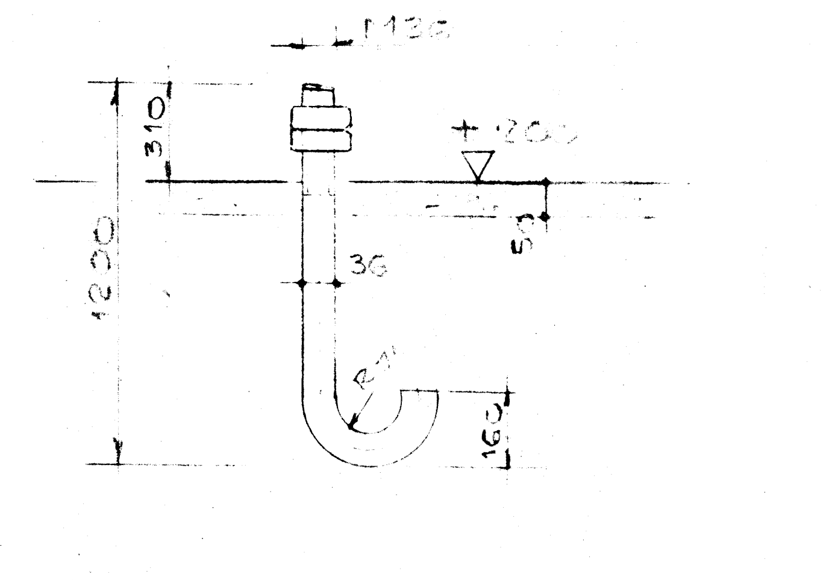
DWG. NO. TS-1331-01
REV. ◇1
ISSUED



PLAN



SECTION A-A



DETAIL OF ANCHOR BOLT

ITEM	A	B	C	D	E	F	G
4_T101, T102	①	16	165	5900	55	1	55
	②	16	1967	5900	31	1	31
	③	13	1967	5900	46	1	46
	④	13	1967	5900	31	1	31
	⑤	19	200	2000	48	1	48
	⑥	10	273	5140	12	1	12
	⑦	19	200	2000	56	1	56
	⑧	16	273	[illegible]	12	1	12
	⑨	13	1967	4000	30	1	30

BAR BENDING SCHEDULE

Enppi
APPROVED
DATE

NAME OF DRAWINGS	SHE
FOUNDATION LOCATION PLAN	H
CONCRETE SPEC.	GOS. A
CONCRETE	GOS. A
SHIM & GROUTING	GOS. A

REFERENCE DRAWIN

NOTE:
ALL DIMENSIONS

NOTES
A. MARK OF REINFOR
B. DIAMETER OF REINFOR
C. PITCH.
D. STRAIGHTENED LENGTH OF R
E. NUMBER OF REINFORCEME
F. NUMBER OF ELEMENT.
G. TOTAL NUMBER OF REI
H. FIGURE.

LIST OF MATE

DESCRIPTION	UNIT	Q
REINFORCED CONC.	M³	[illegible]
LEVELLING CONC.	M²	[illegible]
FORMWORK	M²	[illegible]
EXCAVATION	M³	
BACK FILLING	M³	[illegible]
BAR - D10	KG	
BAR - D13	KG	6
BAR - D16	KG	[illegible]
BAR - D19	KG	[illegible]

ISSUE	DESCRIPTION
4	
3	
2	
1	ISSUED FOR CONSTR.
0	ISSUED FOR APPROVA

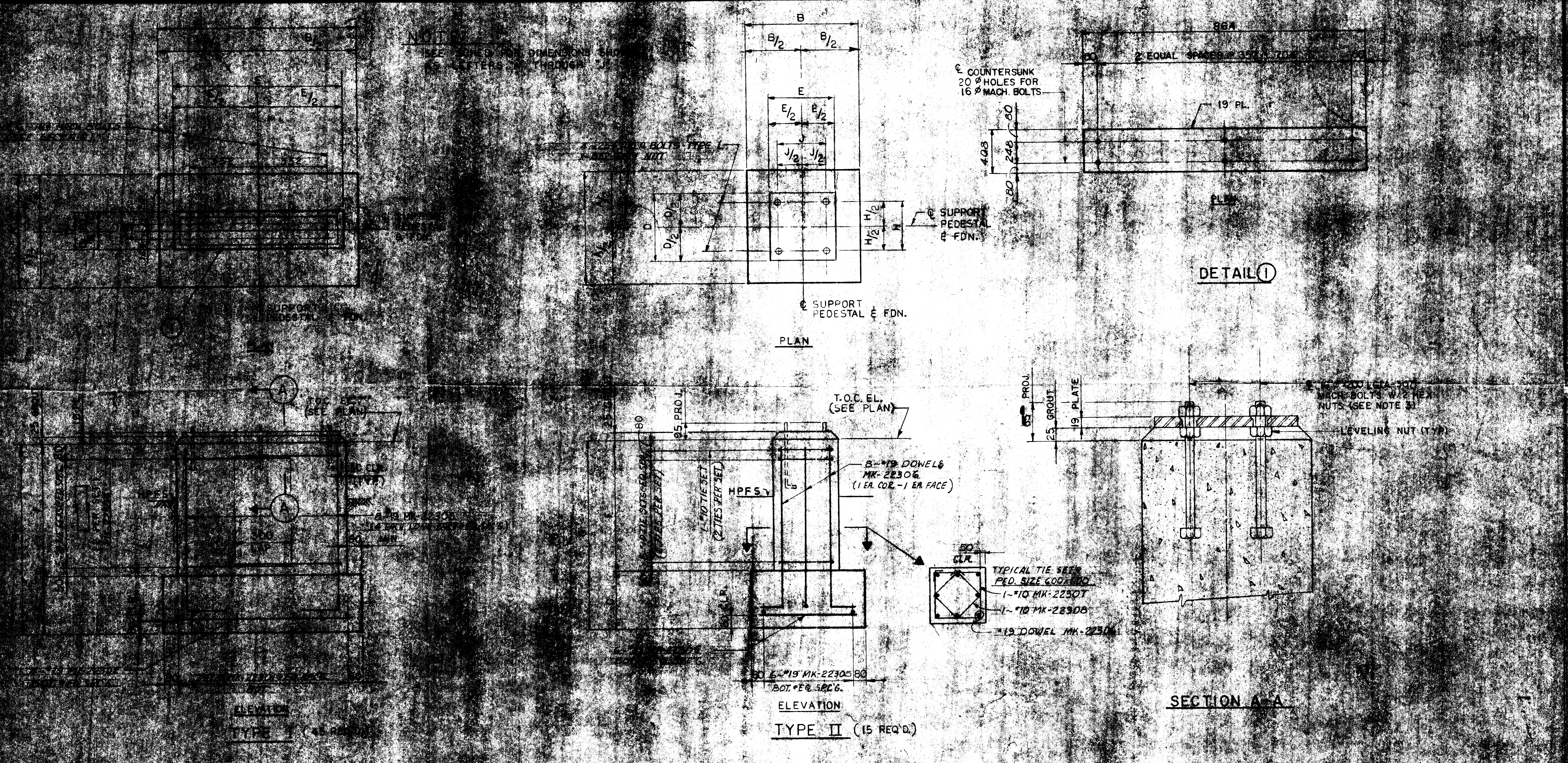
PROJ. No 2318.200
Enppi
ENGINEERING FOR THE PETROLEUM AND
L. NO. 06291401
OWNER.

GULF OF SUEZ GAS PLAN

FOUNDATION DE
4_T101 & 4_

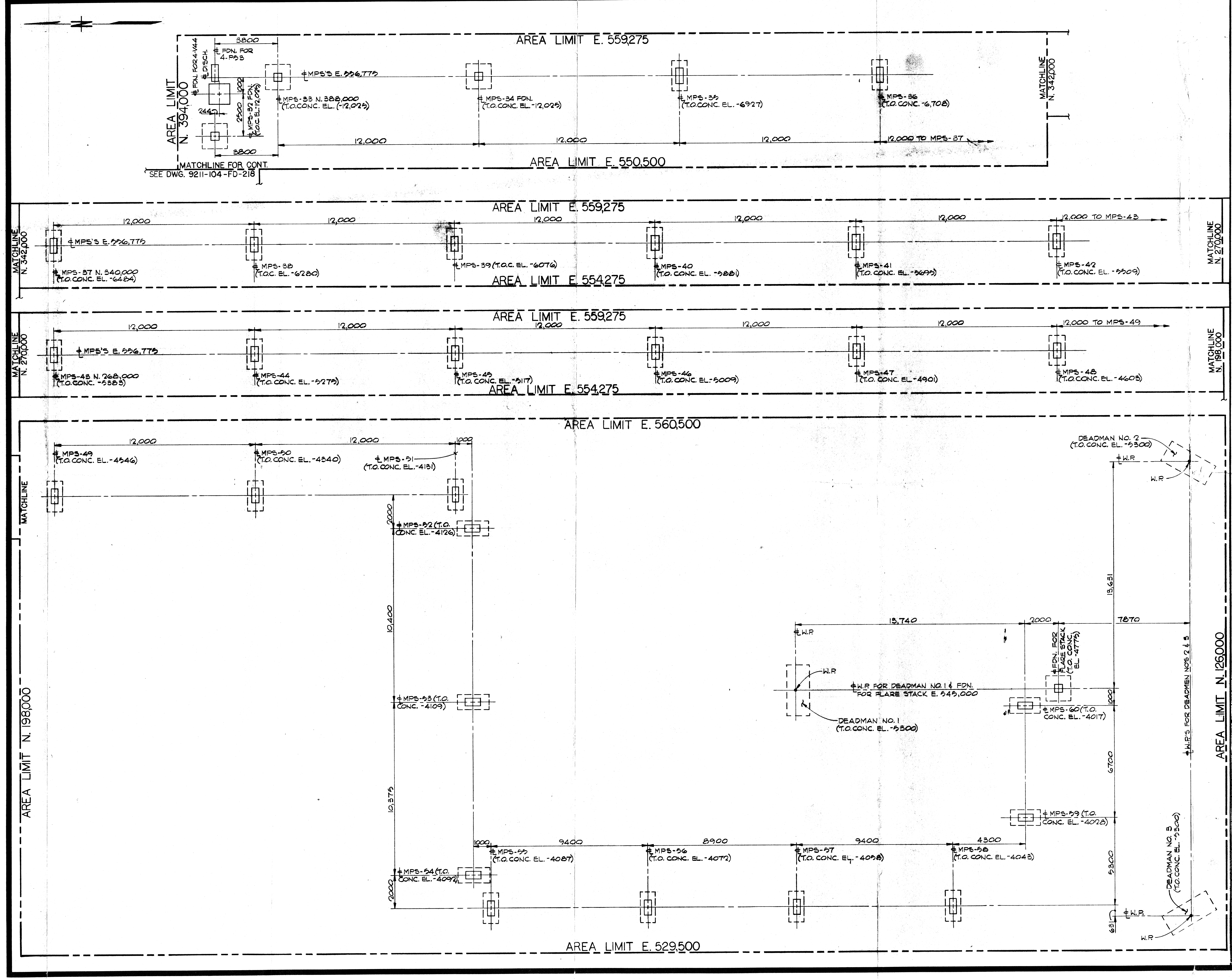
Hitachi Zosen
CIVIL ENGINEERING DEPARTMENT
OSAKA, JAPAN

DATE DEC. 23 - 83
DWG. No. 14
SHEET No. GOS-A



SUPPORT SCHEDULE

SUPPORT NO.	TYPE	NO. REQ'D.	REFERENCE DRAWING			DIMENSIONS A	B	C	D	E	F	G	H	J	PLATE SIZE
[illegible]	I	[illegible]				[illegible]	[illegible]	[illegible]	458	[illegible]	1220	1525	~	~	19 × 408 × 864
[illegible]	II	2				1524	1524	380	508	[illegible]	[illegible]	1675	330	330	SEE STEEL DWG. 9211-104-SD-213
[illegible]	II	13				1524	1524	380	508	508	1295	1675	330	330	SEE STEEL DWG. 9211-104-SD-213
[illegible]	I	[illegible]				[illegible]	[illegible]	380	458	915	1220	1525	~	~	19 × 408 × 864


AREA LIMIT E. 559,275
AREA LIMIT N. 394,000
℄ FDN. FOR 4-P53
℄ FDN. FOR 4-V44 ℄ DISCH.
3800
1000
2500
2440
℄ MPS-32 FDN. (T.O.C. EL.-12,025)
℄ MPS'S E. 556,775
℄ MPS-33 N. 388,000 (T.O. CONC. EL. (-12,025)
℄ MPS-34 FDN. (T.O. CONC. EL.-12,025)
℄ MPS-35 (T.O. CONC. EL.-6927)
℄ MPS-36 (T.O. CONC. -6,708)
12,000
12,000 TO MPS-37
MATCHLINE N. 342,000
AREA LIMIT E. 550,500
MATCHLINE FOR CONT. SEE DWG. 9211-104-FD-218
AREA LIMIT E. 559,275
MATCHLINE N. 342,000
℄ MPS'S E. 556,775
℄ MPS-37 N. 340,000 (T.O. CONC. EL.-6484)
℄ MPS-38 (T.O.C. EL.-6280)
℄ MPS-39 (T.O.C. EL.-6076)
℄ MPS-40 (T.O. CONC. EL.-5881)
℄ MPS-41 (T.O. CONC. EL.-5695)
℄ MPS-42 (T.O. CONC. EL.-5509)
12,000 TO MPS-43
MATCHLINE N. 270,000
AREA LIMIT E. 554,275
AREA LIMIT E. 559,275
MATCHLINE N. 270,000
℄ MPS'S E. 556,775
℄ MPS-43 N. 268,000 (T.O. CONC. -5383)
℄ MPS-44 (T.O. CONC. EL.-5275)
℄ MPS-45 (T.O. CONC. EL.-5117)
℄ MPS-46 (T.O. CONC. EL.-5009)
℄ MPS-47 (T.O. CONC. EL.-4901)
℄ MPS-48 (T.O. CONC. EL.-4605)
12,000 TO MPS-49
MATCHLINE N. 198,000
AREA LIMIT E. 554,275
AREA LIMIT E. 560,500
MATCHLINE
AREA LIMIT N. 198,000
℄ MPS-49 (T.O. CONC. EL.-4546)
℄ MPS-50 (T.O. CONC. EL.-4340)
℄ MPS-51 (T.O. CONC. EL.-4131)
1000
2000
℄ MPS-52 (T.O. CONC. EL.-4126)
10,400
℄ MPS-53 (T.O. CONC.-4109)
10,375
℄ MPS-54 (T.O. CONC. EL.-4092)
1000
9400
8900
9400
4300
℄ MPS-55 (T.O. CONC. EL.-4087)
℄ MPS-56 (T.O. CONC. EL.-4072)
℄ MPS-57 (T.O. CONC. EL.-4058)
℄ MPS-58 (T.O. CONC. EL.-4043)
℄ MPS-59 (T.O. CONC. EL.-4028)
℄ MPS-60 (T.O. CONC. EL.-4017)
DEADMAN NO. 2 (T.O. CONC. EL.-5300)
℄ W.P.
W.P.
13,631
13,740
2000
7870
℄ FDN. FOR FLARE STACK (T.O. CONC. EL.-4775)
℄ W.P. FOR DEADMAN NO. 1 & FDN. FOR FLARE STACK E. 545,000
DEADMAN NO. 1 (T.O. CONC. EL.-5300)
1000
6700
5300
631
℄ W.P.'S FOR DEADMEN NOS 2 & 3
DEADMAN NO. 3 (T.O. CONC. EL.-5300)
AREA LIMIT N. 126,000
AREA LIMIT E. 529,500

GENERAL NOTES:

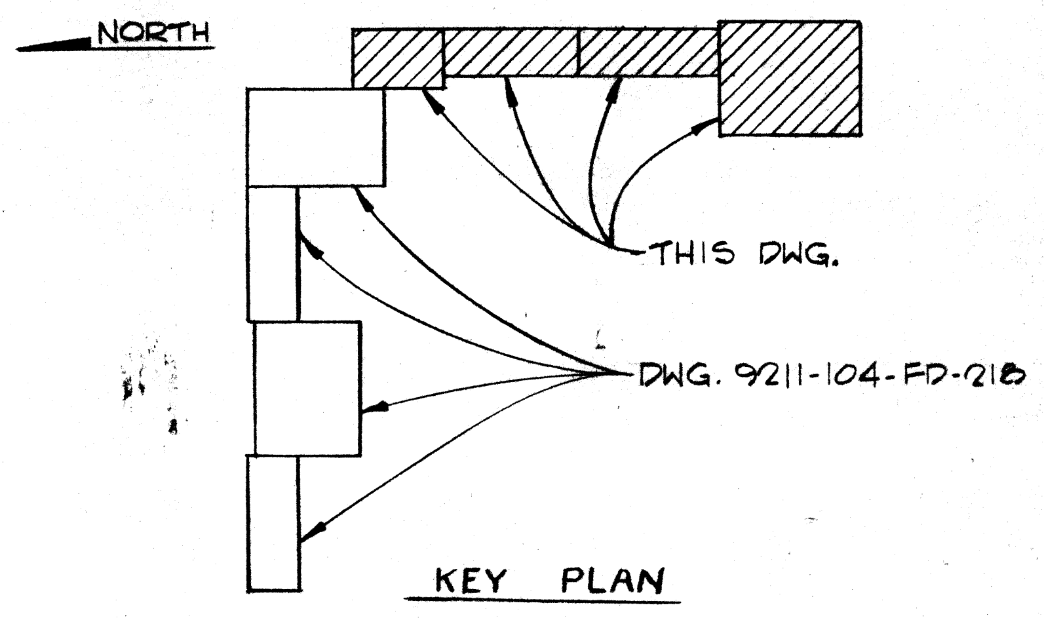
1. FOR GENERAL NOTES AND REFERENCE DRAWINGS SEE DRAWING 9211-104-FD-218.

FIELD VERIFY ALL COORDINATES, DIMENSIONS & ELEVATIONS

REFERENCE DRAWINGS:

9211-104-FD-218 FLARE AREA FDN. LOCATION PLAN SHT. 1 OF 2

APPROVED A. I. O. C. HOUSTON



KEY PLAN

REV	DATE	DESCRIPTION	BY	CHECKED	DESIGNED	APPROVED
1	8/4/81	ISSUED FOR CONSTRUCTION	N·H			M·S
HL	7/22/81	APPROVED FROM A.I.O.C.	RNS	D.L.D.	E.F.	7/2
HO	7/22/81	ISSUED FOR APPROVAL	RNS	RR	E.F	

NOTICE

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ISSUED FOR CONSTRUCTION
BY MMS DATE 8/4/81
CUSTOMER APPROVAL

DESIGNED	DRAWN	REVIEWED	APPROVED
E.F.	R. SUTTON	RR	

FOR E.G.P.C. لأجل
AT RAS SHUKHEIR الموقع

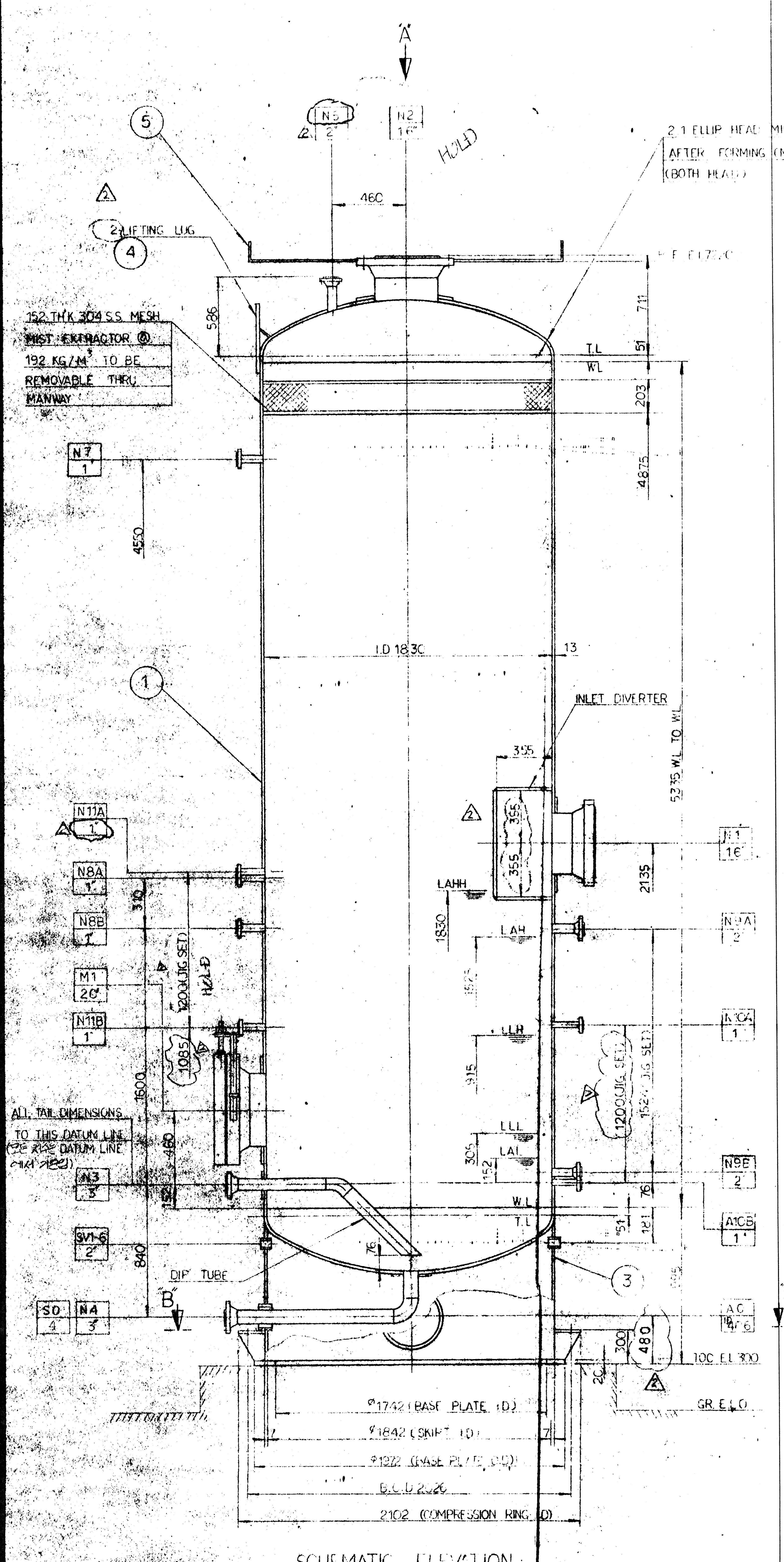
GULF OF SUEZ GAS PROJECT
GAS SWEETENING UNIT
AREAS 9A & 9C STRUCTURAL
FLARE AREA FDN. LOCATION PLAN - SHT. 2 OF 2

الشركة الهندسية للصناعات البترولية والكيماوية
Enppi إنبي
ENGINEERING FOR THE PETROLEUM AND PROCESS INDUSTRIES

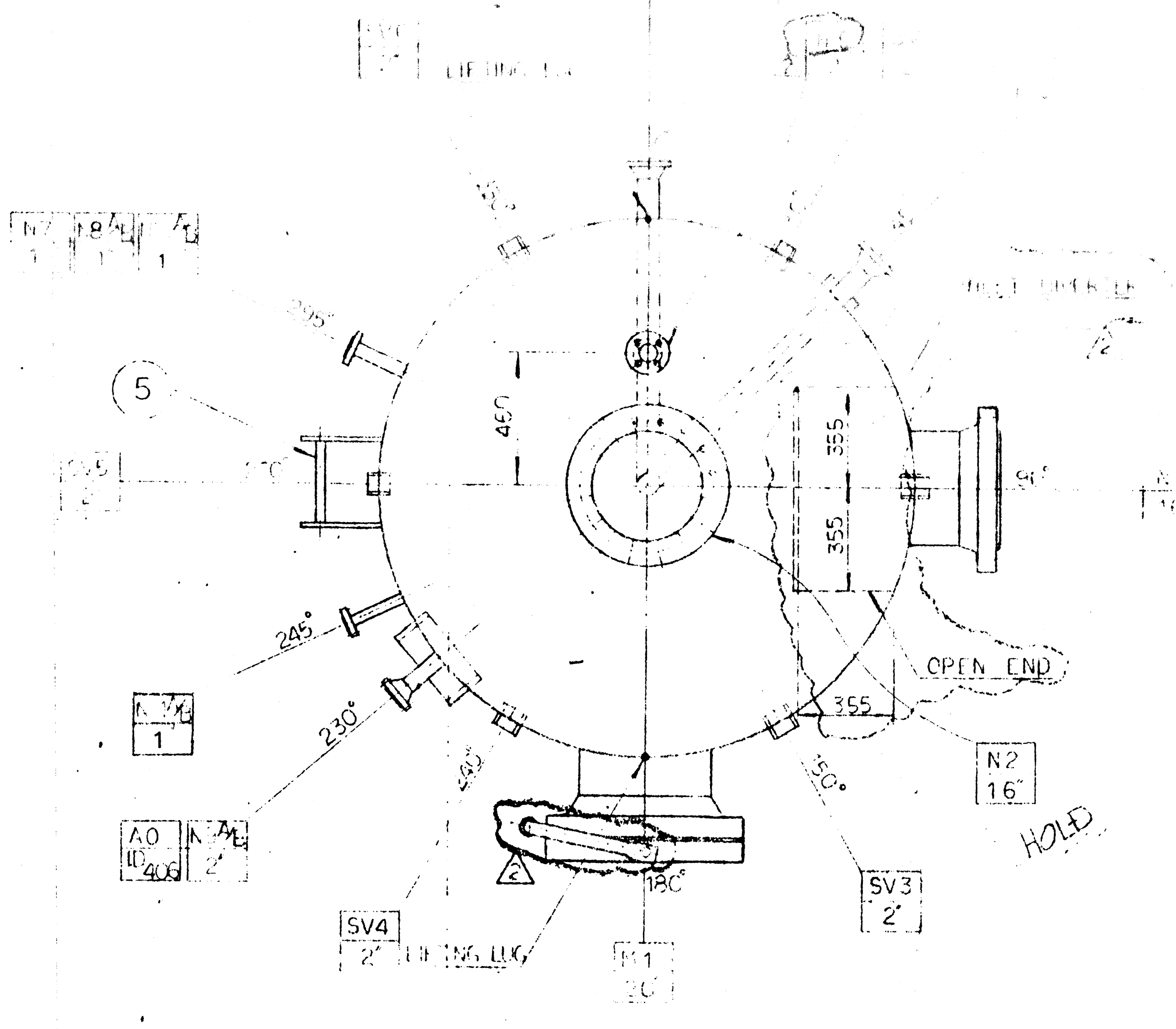
SCALE	DRAWING NUMBER	REVISION
1:100	9211-104-FD-219	1
DATE 7-21-81		

DWG NO. HHI163V - 039 - 00
DEC 10653-1400-01-8V-100-01

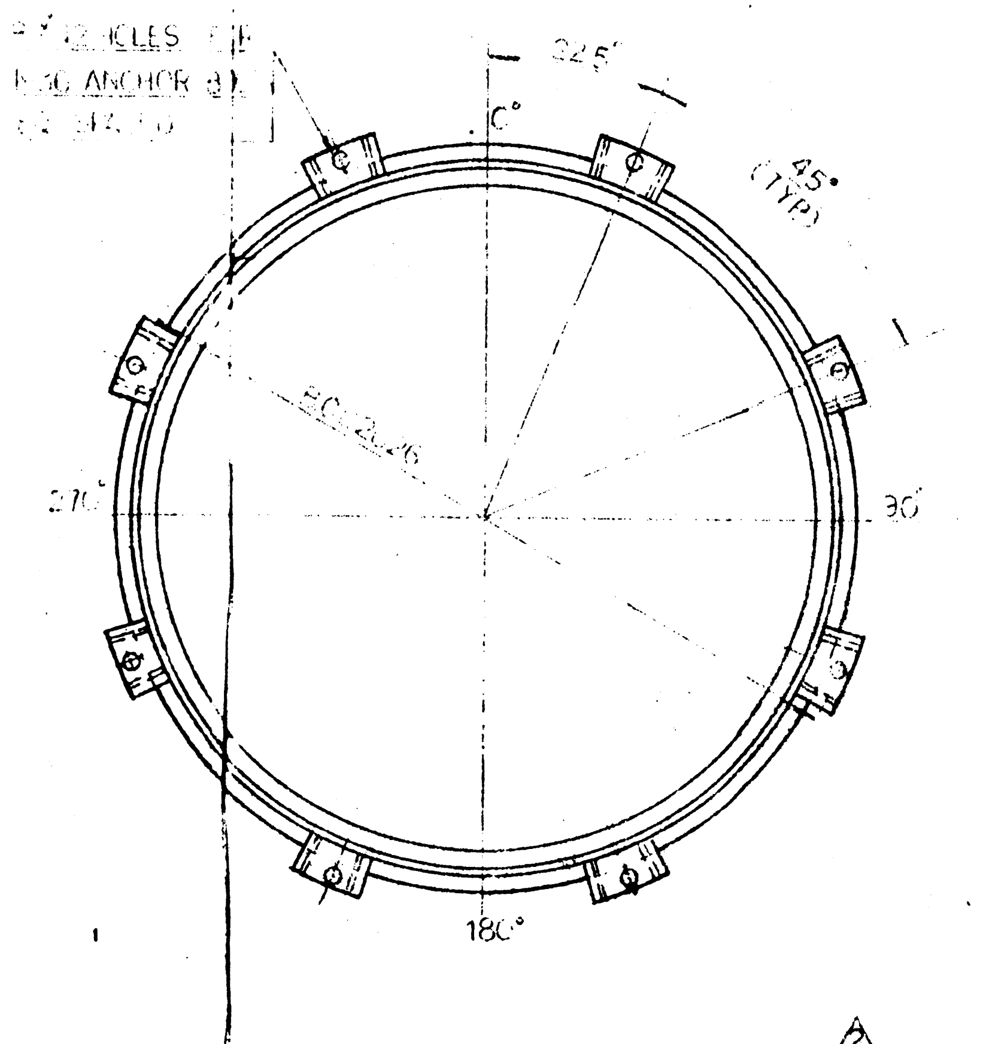
MK	DATE	REASON FOR REVISION	DWN	DES	CHK	APP
1	86. 6. 25	REVISED BY OWNER COMMENT.				
2	[illegible]	REVISED BY OWNER COMMENT				



SCHEMATIC ELEVATION
(TRUE ORIENTATION SHOWN IN SECTION)



NOZZLE ORIENTATION
(VIEW A)



ANCHOR BOLT ORIENTATION
(SECTION B-B)

GENERAL NOTES

1. ALL DIMENSIONS ARE IN MM UNLESS OTHERWISE NOTED.
(모든 치수는 별도로 언급하지 않는한 밀리미터이다.)
2. ALL FLANGE BOLT HOLES SHALL BE STRADDLED TO MAIN AXES OF EQUIPMENT UNLESS OTHERWISE NOTED.
(모든 플랜지 볼트구멍은 별도로 언급하지않는한 기기의 중심선에 대칭이다.)
3. TOLERANCE SHALL BE APPLIED TO DWG NO. 163V-000-00
(공차는 도면번호163V-000-00 에 따라 적용할것.)

MARK	QTY	SIZE	SCH.	RATING	TYPE	SERVICE	PROJ.	THK'S REINF.	O.D PAD	(SEE DWG NO.) REMARKS
SV1-6		2"	40	-	-	SKIRT VENT	-	-	-	163V-039-01
S1	1	[illegible]	[illegible]	-	-	SKIRT [illegible]	-	-	-	-01
A0		D 406	1"		-	[illegible]		-	-	163V-039-01
M1		20"	40	150#	W.N R.F	MANWAY W/BLIND&DAVIT	1182	13	750	163V-039-02
N11A/B	2	1	12.7		LWN RF	GAGE GLASS	1105	-	-	
N10A/B	2	1"	12.7		LWN RF	GAGE GLASS	1105	-	-	
N9A/B		2	160		WN RF	LEVEL TRANS.	1105	-	-	
N8A/B	2	1"	12.7		LWN RF	LEVEL SWITCH	1105	-	-	
N7		1	12.7		LWN RF	PRESS. IND	1105	-	-	
[illegible]	1	2"	160		WN RF	REFLUX	SEE DWG	-	-	
N4	1	3	160			DRAIN	1105	13	120	
[illegible]						[illegible]	[illegible]	13	[illegible]	
		16	80			GAS OUTLET	SEE DWG	13	570	
		16	80	150#	W.N RF	INLET	1182	13	570	163V-039-02

NOZZLE SCHEDULE

EXTL FITTING SA234-WPB	INTL FITTING SA234-WPB
EXTL GASKET COMPRESSED ASBESTOS FIBER	INTL GASKET COMPRESSED ASBESTOS FIBER
EXTL BOLT/NUT SA193-B7/SA194-2H CAD. PLTD	INTL BOLT/NUT SA193-B7/SA194-2H CAD. PLTD
EXTL FLANGE [illegible]	INTL FLANGE -
EXTL NOZZLE NECK SA106-B	INTL NOZZLE NECK SA106-B
EXTL SHAPE STL SA285	INTL SHAPE STL SA285-C/SA 516-70
EXTL PLT SA516-70	INTL PLT SA516-70

MATERIAL DESCRIPTION

FOR INFORMATION ONLY

PART NO.	PART NAME	MATERIAL	REQ'D QT'Y	WEIGHT (KG)	(SEE DWG NO.) REMARKS
6	NAME PLATE	SUS304	1		
5	LADDER & PLATFORM CLIP	SA285-C			163V-039-03
4	LIFTING LUG	SA516-70	2		-01
3	SKIRT	SA283-C	1		-01
2	HEAD	SA516-70	2		-01
1	SHELL	SA516-70	1		163V-039-01

NO	DESCRIPTION	DWG. NO.	REMARKS	NO	DESCRIPTION	DWG NO.	REMARKS
6	VESSEL LIFTING LUG	HHI-DS-A25M					
5	LADDER & PLATFORM CLIP DETAIL	-DS-A24M					
4	SKIRT CONSTRUCTION DETAIL	-DS-A19M					
3	DAVIT DETAILS OF MANWAY COVER	-DS-A4M					
2	CONSTRUCTION TOLERANCE	-DS-A3M					
1	BASE RING & LUG DETAIL	HHI-DS-A1M					

REFERENCE DRAWINGS

IMPACT TEST NONE
PRODUCTION TEST NONE
P.W.H.T NONE
M.A.W.P / M.A.P 15.82 KG/Cm².G
PRESSURE EXTERNAL - KG/Cm².G
PRESSURE INT. DESIGN 10.55 KG/Cm².G
PRESSURE INT. OPER 7.07 KG/Cm².G
STD. SPEC. A.E.S. SPEC. [illegible]
STAMP YES
CODE ASME SECTION VIII DIVISION 1
VACUUM TEST NONE
PNEUMATIC TEST NONE
HARDNESS TEST NONE
PROCESS FLUID LOWER PRESSURE GAS
TEMPERATURE EXTERNAL - °C
TEMPERATURE INT. DESIGN 93 °C
TEMPERATURE INT. OPER [illegible] °C
MIN. TEMP. °C
EMPTY W.T (KG) 7,500
OPERATING W.T (KG) 12,600
HYDRO-TEST W.T (KG) 22,000
CAPACITY 26.9 M³
FIRE PROOFING YES
WIND LOAD 160 KM/HR
INSULATION NO
EARTH QUAKE FACTOR
JOINT EFFICIENCY SHELL 1.0
JOINT EFFICIENCY HEAD 1.0
JOINT EFFICIENCY SHELL TO HEAD [illegible]
HYDRO-TEST PRESSURE CORR'D KG/Cm².G
HYDRO-TEST PRESSURE NEW [illegible] KG/Cm².G
CORROSION ALLOWANCE SHELL & HEAD 3.2 MM
CORROSION ALLOWANCE INTERNALS NON REM. [illegible] MM
CORROSION ALLOWANCE INTERNALS REM. [illegible] MM
CORROSION ALLOWANCE NOZZLE & MANHOLE 3.2 MM
RADIOGRAPHIC TEST SHELL TO HEAD [illegible]
RADIOGRAPHIC TEST SHELL TO SHELL [illegible]

DESIGN DATA

CUSTOMER E.G.P.C
4 SET
DWN DONG WOO I.S. CHO
DES W.D.K. 86.6.17
CHK S.J. Lee 86.6.18
CHF
APP 86.6.18
SCALE 1:20
PROJECT 106 BOOSTER COMPRESSION STATION
TITLE 8V-100, 200, 300, 400 COMPRESSOR SUCTION SCRUBBER ASSEMBLY
REF T7550-SK-206 REV0
DWG NO. HHI 163V-039-00
DEC 10653-1400-01-8V-100-01
REV M'K 2 1 0

HYUNDAI HEAVY INDUSTRIES CO., LTD.
INDUSTRIAL PLANT DIVISION

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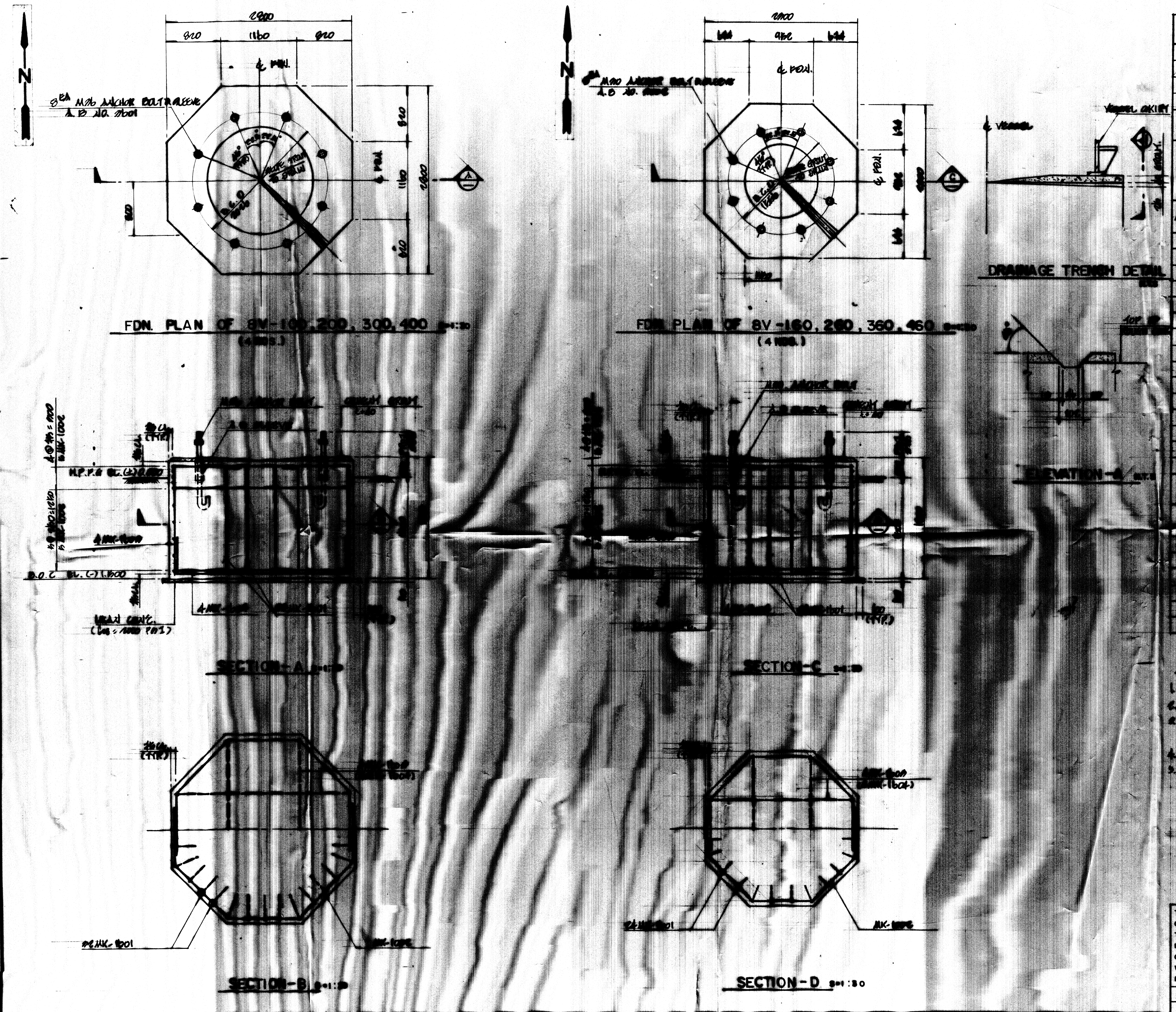
現代重工業株式會社 프랜트 事業本部



REFERENCE DRAWING

DWG. NO.	TITLE
C1-A-011	FOUNDATION LOCATION PLAN
C1-B-008	ANCHOR BOLT DETAIL

BAR BENDING SCHEDULE

Ⓐ a, b Ⓑ a, 135°

MARK	TYPE	SIZE	EA	BAR BENDING a	b	c	d	CUT L.	TOTAL L.	UNIT WT. (KG/M)	TOTAL WT. (KG)
8V-100, 200, 300, 400 (4 FDNS.)											
1601	A	#6	128	1610	260x2			2170	277760	1.552	431.1
1602	B	[illegible]	80	1098x[illegible]	400x2			4694	375520	0.560	210.29
1603	A	#6	16	2670	1610x2			5890	94240	1.552	146.26
1604	A	"	16	[illegible]	600x2			3630	58080	"	90.140
TOTAL (NET)											868.8
8V-160, 260, 360, 460 (4 FDNS.)											
1601	A	#6	96	1610	260x2			2170	208320	1.552	[illegible]
1602	B	"	80	890x[illegible]	600x2			2090	167200	0.560	93.6
1603	A	#6	16	[illegible]	1610x2			[illegible]	[illegible]	1.552	[illegible]
1604	A	"	16	[illegible]	600x2			3130	50080	"	77.724
TOTAL (NET)											621.56

MATERIAL LIST

ITEM	UNIT	DRAWING A			REVISION		
CONCRETE ([illegible] PO1)	M³	16.6					
CONCRETE ([illegible] PO1)	"	2.6					
RE-BAR (GRADE 60)	TON	1.49					

NOTES

1. ALL DIMENSIONS ARE IN MILLIMETERS.
2. MIN. COMPRESSIVE STRENGTH OF CONC. AT 28 DAYS IS
3. THE RE-BAR SHALL BE USED GRADE 60 CONFORMING TO ASTM A-615.
4. B.M.O.L [illegible] = PLANT EL. 0.000.
5. FOUNDATION SHALL BE EXCAVATED AND BACKFILLED IN ACCORDANCE WITH GEOTECHNICAL REPORT GUPCO RAS SHOUKHEIR-5, ITEM IV WHICH IS ATTACHED IN T/D. SPEC. VOL. I, PART V.

STAGE

PRINT

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BOOSTER COMPRESSION STATION (UNIT
RAS SHUKHEIR, EGYPT
OWNER : EGYPTIAN GENERAL PETROLEUM
(E G P C)

PREPARED BY
DAELIM ENGINEERING CO.
SEOUL, KOREA

FOUNDATION DETAIL FOR
8V-100, 200, 300, 400 &
8V-160, 260, 360, 460

SCALE	AS SHOWN	DATE
DRAWN BY	[illegible]	'86.6.28
CHECKED BY	J.H. KWON	'86.7.21
CHECKED BY	H.I. LEE	86.7.25
APPROVAL	[illegible]	86.7.28
APPROVAL	[illegible]	86.9.31
CLIENT APPROVAL		

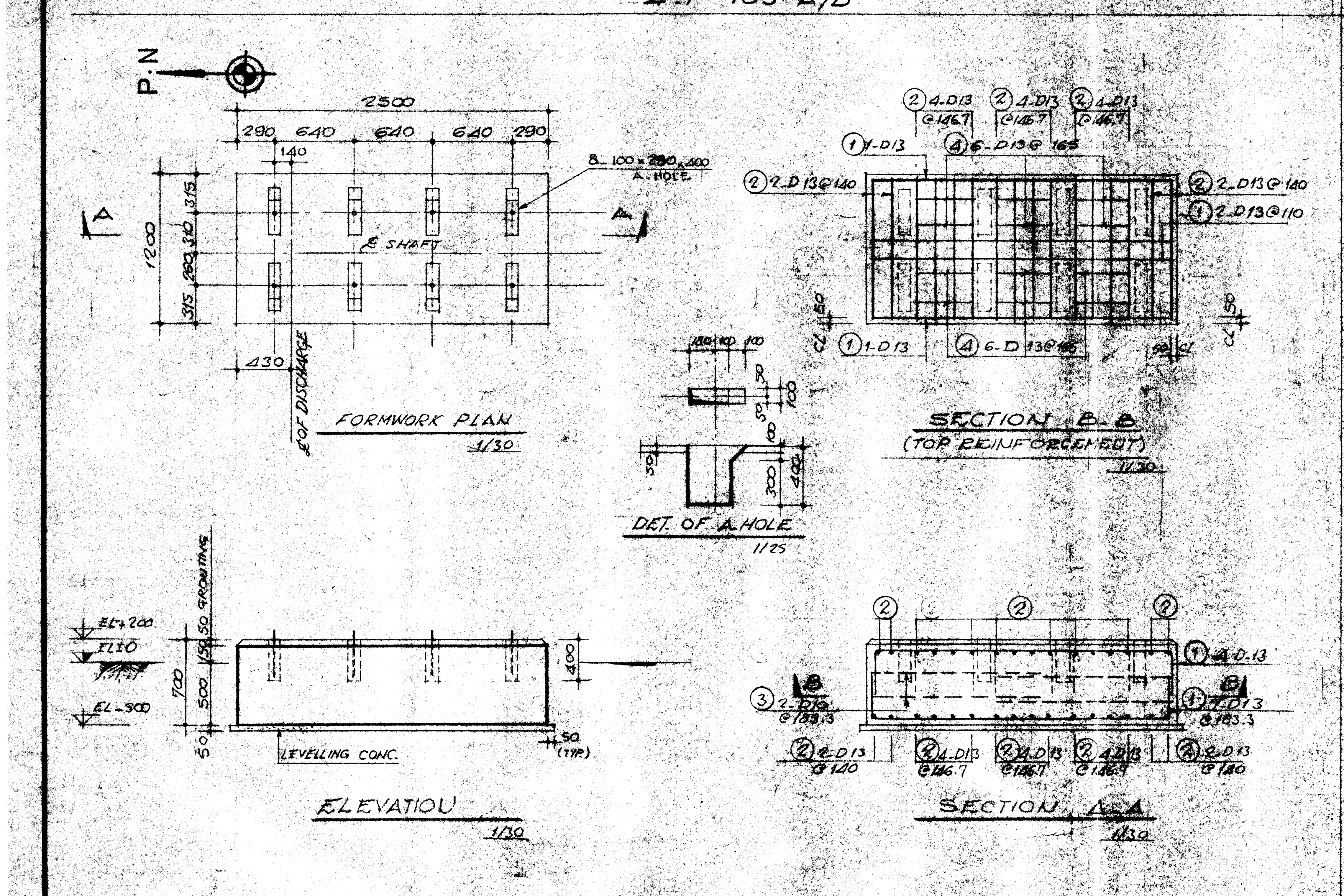
CONTRACT NO.
JOB NO. 10653
DWG. NO. C1-B-012

REV.	LOC.	DESCRIPTION	APP'D DAELIM	APP'D CLIENT	MICRO FILM
△					
△					
△					

REV.	LOC.	DESCRIPTION	APP'D DAELIM	APP'D CLIENT	MICRO FILM
△					
△					
△		A.F.C			

D-2

4-P 103 A/B



FORMWORK PLAN 1/30

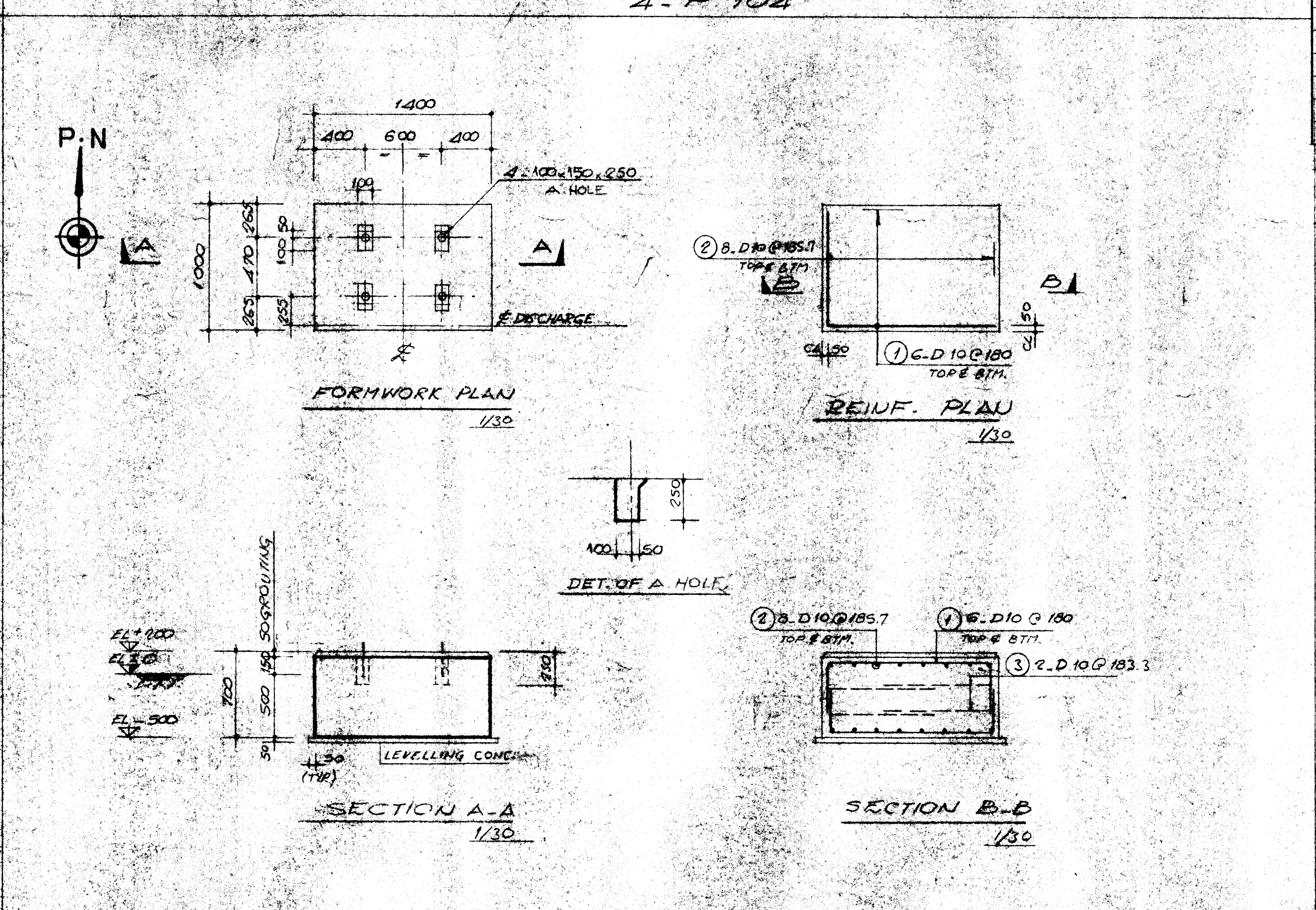
SECTION B-B (TOP REINFORCEMENT) 1/30

DET. OF A.HOLE 1/25

ELEVATION 1/30

SECTION A-A 1/30

4-P 104



FORMWORK PLAN 1/30

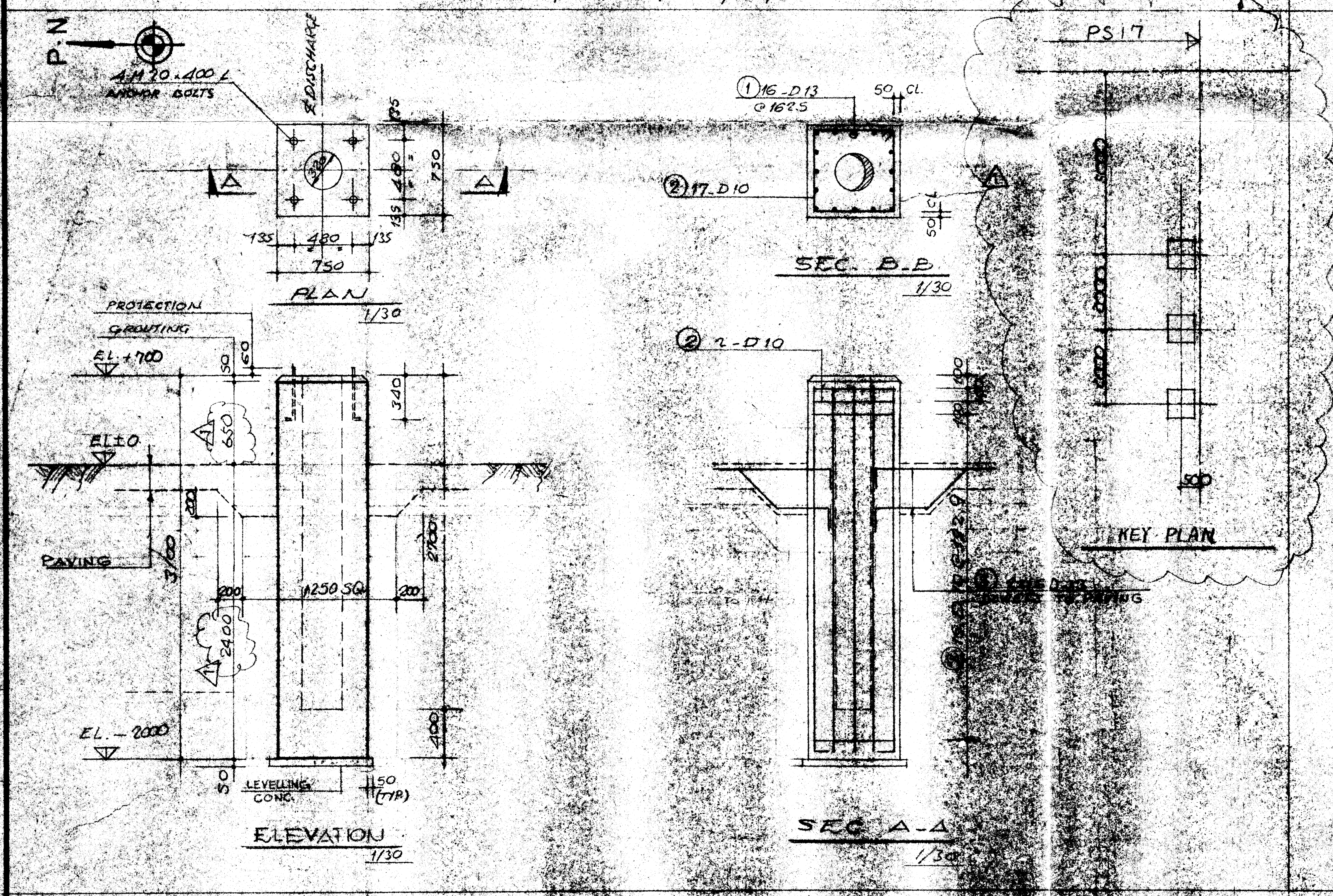
REINF. PLAN 1/30

DET. OF A HOLE

SECTION A-A 1/30

SECTION B-B 1/30

4-P 57 A/B/C



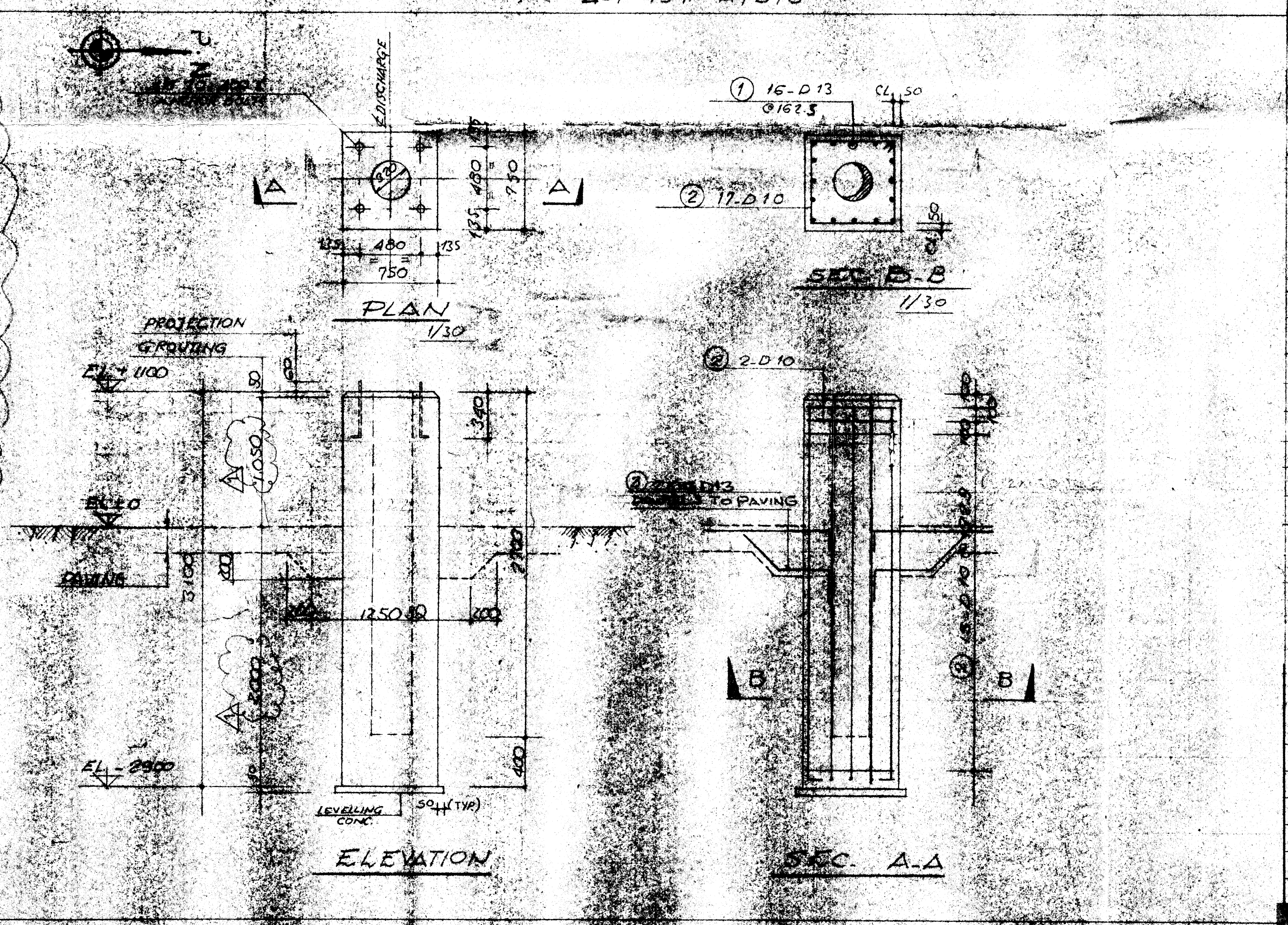
PLAN 1/30

SEC. B-B 1/30

ELEVATION 1/30

SEC. A-A 1/30

4-P 157 A/B/C



PLAN 1/30

SEC. B-B 1/30

ELEVATION

SEC. A-A

BAR BENDING SCHEDULE

ITEM	A	B	C	D	E	F	G		H
4-P 103 A/B	①	13	–	3480	4+7=11	2	22		540 [illegible] 540
	②	13	–	2180	16+16=32	[illegible]	64		540 1100 540
	③	10	183.3	3900	4	[illegible]	8		1400 [illegible] 900
	④	13	–	1580	12	2	24		540 500 540

ITEM	A	B	C	D	E	F	G		H
4-P 104	①	[illegible]	180	[illegible]	12	[illegible]	[illegible]		500 1300 500
	②	[illegible]	185.7	[illegible]	16	[illegible]	[illegible]		500 [illegible] 500
	③	[illegible]	183.3	[illegible]	4	[illegible]	[illegible]		850 [illegible] 900

ITEM	A	B	C	D	E	F	G		H
4-P 57 A/B/C	①	13	1625	3175	16	3	48		2975 200
	②	10	–	2800	17	3	51		650 650 100 (TYP)
	③	13	–	850	2×16	3	96		700

ITEM	A	B	C	D	E	F	G		H
4-P 157 A/B/C	①	13	[illegible]	3175	16	3	48		2975 200
	②	10	[illegible]	2800	17	3	51		650 650 100 (TYP)
	③	13	–	850	2×16	3	96		700

REFERENCE DRAWINGS

NAME OF DRAWINGS	SHEET No.	REM
FOUND. LOCATION PLAN	GOS-AC-1400-53-010	4.P
"	GOS-AC-1400-53-010	4.P
"	GOS-AC-1400-53-005	4.P
"	GOS-AC-1400-53-003	4.P
CONCRETE SPECS.	GOS-AC-20-006	
CONCRETE ACC.	GOS-AC-20-010	
SHIM & GROUTING	GOS-AC-20-007	

NOTE:

ALL DIMENSIONS ARE IN M.M

Enppi
APPROVED
DATE May 12 96

NOTES:

A...MARK OF REINFORCEMENT.
B...DIAMETER OF REINFORCEMENT.
C...PITCH
D...STRAIGTHENED LENGTH OF REINFORCEME
E...NUMBER OF REINFORCEMENT PER ELEMENT.
F...NUMBER OF ELEMENT.
G...TOTAL NUMBER OF REINFORCEMENT
H...FIGURE

LIST OF MATERIALS

DESCRIPTION	UNITS	QUANTITY	REM
REINFORCED CONC.	M3	15.64	
LEVELLING CONC.	M2	12.75	
FORMWORK	M2	67.64	
EXCAVATION	M3	17.413	
BACK FILLING	M3	2.86	
BAR - D10	KG	215.72	
BAR - D13	KG	718.40	

ISSUE	DESCRIPTION	DATE	CHKD
4			
3			
2			
1	REVISED AS NOTED ⚠1	AUG 31 '87	N.M.
0	ISSUED FOR APPROVAL	9/4 '86	Osama

[redacted]

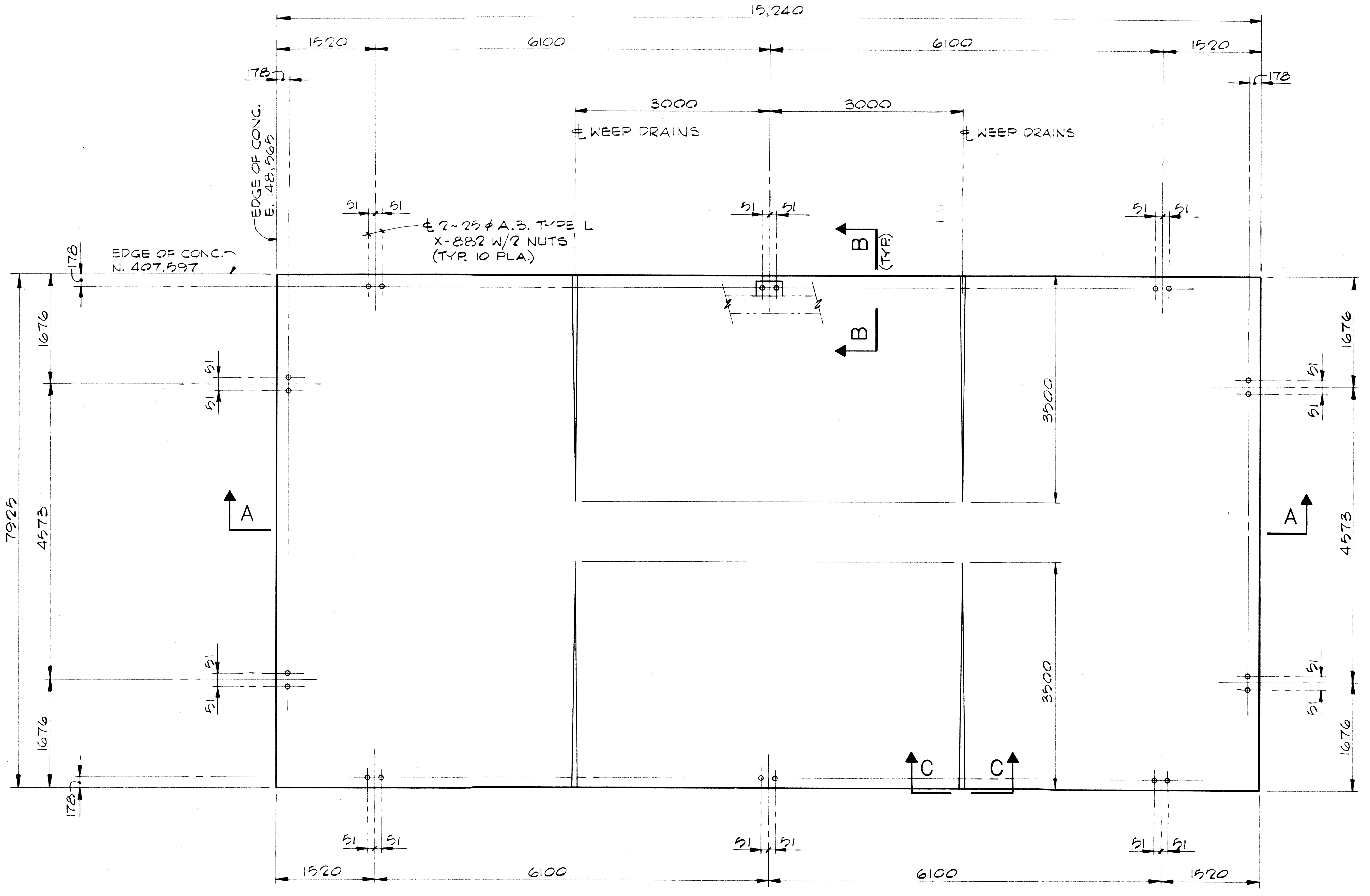
06291401 EGPC

GULF OF SUEZ GAS PLANT PHASE I
FOUNDATION DETAILS FOR
4-P 103 A/B , 4-P 104
4-P 57 A/B/C & 4-P 157 A

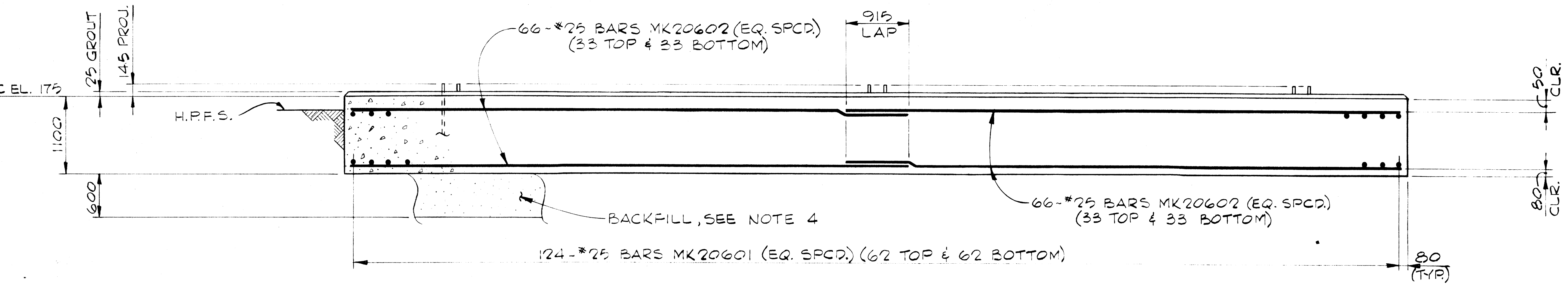
(SCALE) 1/30

Hitachi Zosen
CIVIL ENGINEERING DEPARTMENT
OSAKA, JAPAN

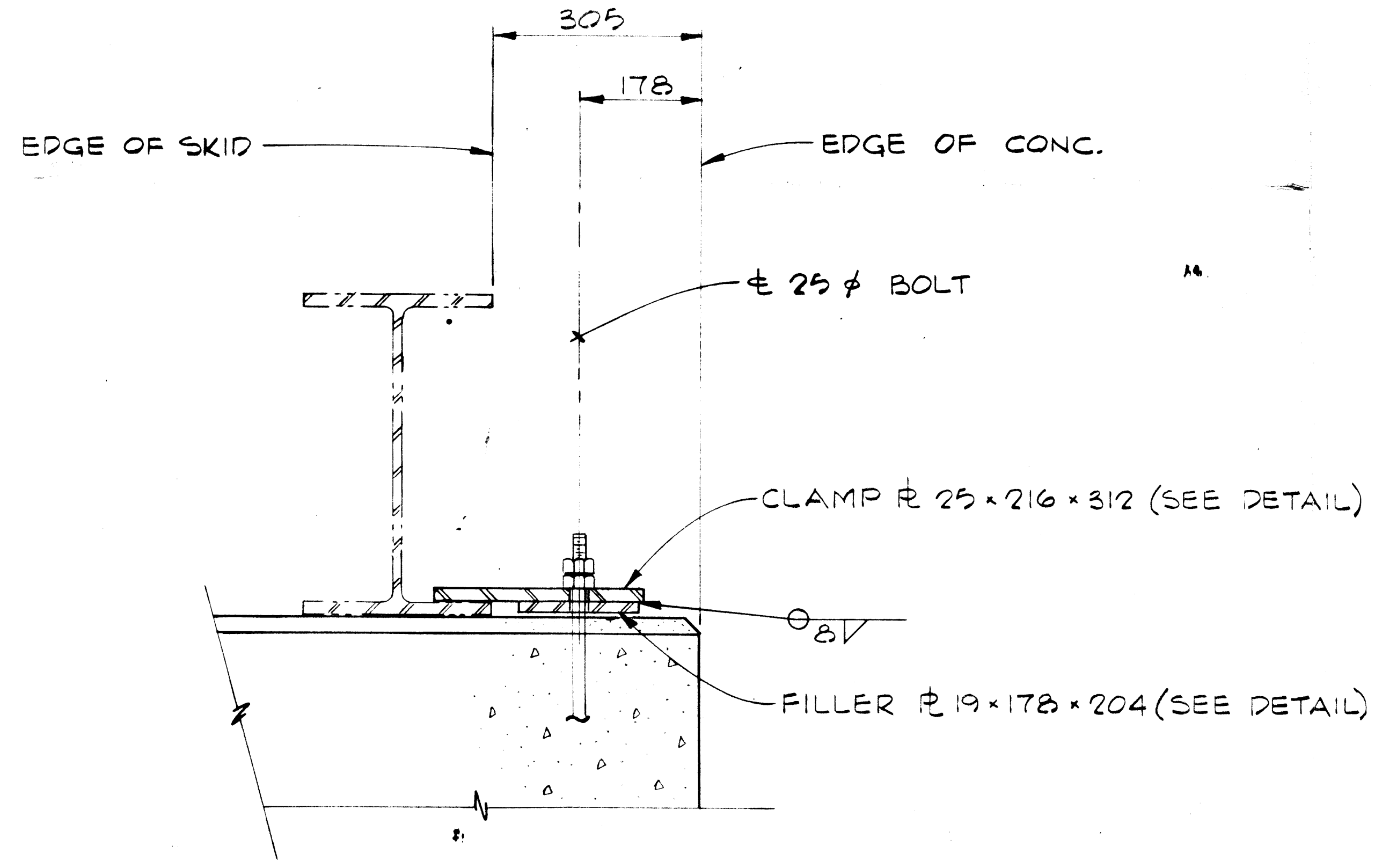
(DRAWN BY) JK
(CHECKED BY) Osama
DATE MARCH / 9/ 1986
RELATED SECTION
DWG. No. 2465375
SHEET No. GOS-AC-1400-53-11



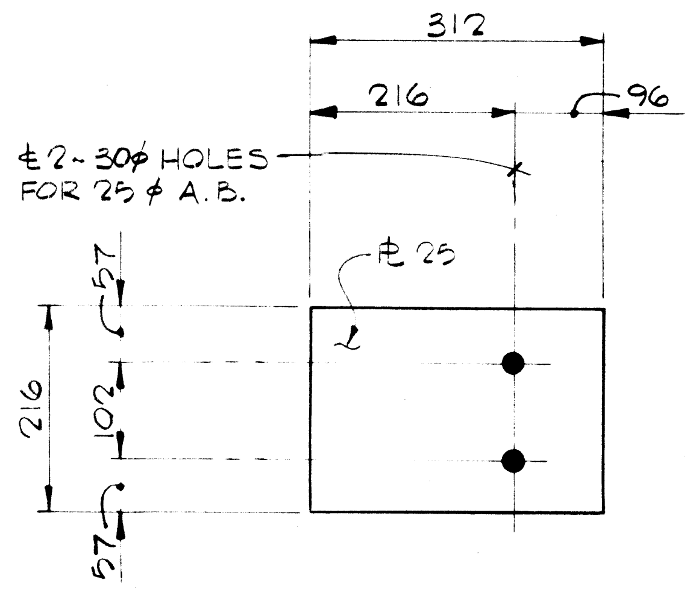
PLAN


66-#25 BARS MK20602 (EQ. SPCD.) (33 TOP & 33 BOTTOM)
915 LAP
25 GROUT
145 PROJ.
EL. 175
H.P.F.S.
1100
600
50 CLR.
80 CLR.
BACKFILL, SEE NOTE 4
66-#25 BARS MK20602 (EQ. SPCD.) (33 TOP & 33 BOTTOM)
124-#25 BARS MK20601 (EQ. SPCD.) (62 TOP & 62 BOTTOM)
80 (TYP.)

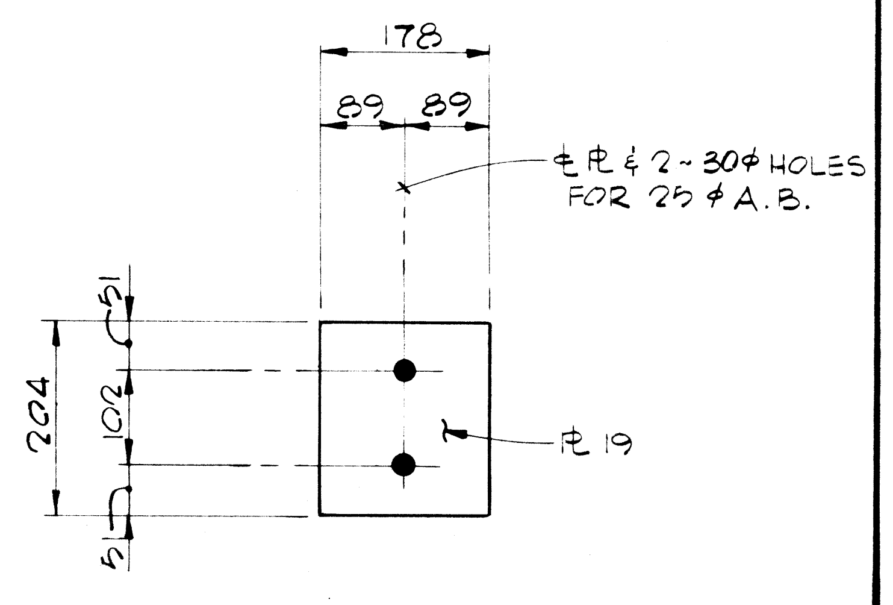
SECTION A-A


305
178
EDGE OF SKID
EDGE OF CONC.
℄ 25 ⌀ BOLT
CLAMP PL 25×216×312 (SEE DETAIL)
8V
FILLER PL 19×178×204 (SEE DETAIL)

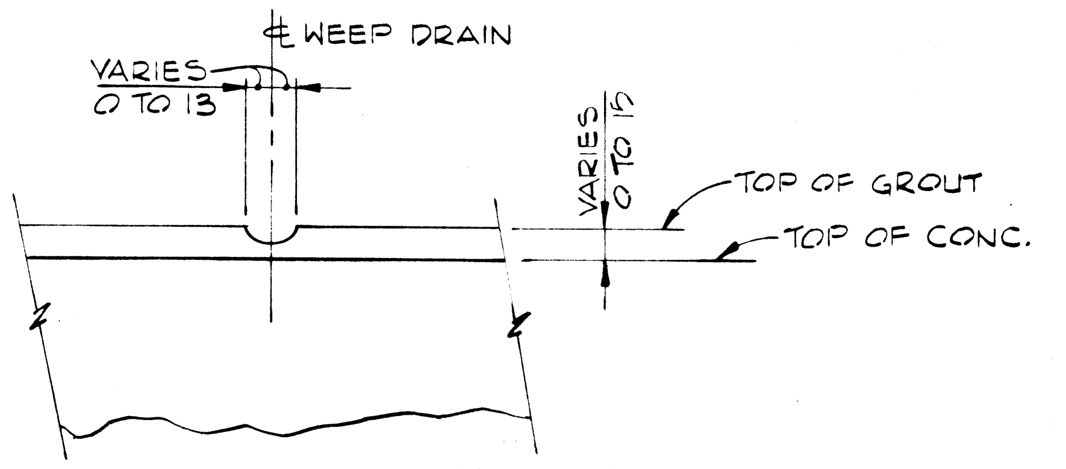
SECTION B-B
(TYP. 10 PLACES)
SCALE: 1:10



CLAMP PLATE DETAIL
NTS



FILLER PLATE DETAIL
NTS



VIEW C-C
NTS

GENERAL NOTES:

1. FOR CONCRETE GENERAL NOTES … JIN
   9211-104-FD-200.
2. ALL DIMENSIONS ARE IN MILLIME
3. HIGH POINT FINISHED SURFACE (H … TUN
   ELEV. 0.00 METERS. H.P.F.S. IS 1… S
   MEAN SEA LEVEL.
4. FILL BELOW FOUNDATION TO BE … MPA
   GRAVEL, COARSE SAND OR OTHE … MA
5. CONCRETE FOR FOUNDATION TO B … "A"
6. GROUT QUANTITY TO BE MEASU … ELD
7. ALL WELD SIZES ARE IN MILLIMETE

ESTIMATED MATERIAL	
CONCRETE	(M³)
BACKFILL	(M³)
25 ⌀ ANCHOR BOLTS	(EA.
REBAR	(METRIC TON
PL 25×216×312	(EA.
PL 19×178×204	(EA

* TOTAL 25 THK. PL = 673920 (MM²)
** TOTAL 19 THK. PL = 363120 (MM²)

REFERENCE DRAWINGS

9211-104-FD-200	CONCRETE GEN … ES
9211-104-FD-201	FOUNDATION LOC … AN
B-9211-104-FD-224	REBAR SCHED. F … I F
9211-104-SD-207	ANCHOR BOLT

APPROVED A. I. O. C. HOUSTO

REV	DATE	DESCRIPTION	
1	6-24-81	ISSUED FOR CONSTRUCTION	
H1	6/19/81	APPROVED FROM A.I.O.C	R
H0	6/12/81	ISSUED FOR APPROVAL	R

NOTICE
THIS DRAWING HAS NOT BEEN PUBLISHED IT IS THE SOLE PROPERTY
IT IS LENT TO THE RECIPIENT FOR HIS CONFIDENTIAL USE ONLY
AGREEMENTS FOLLOWING IN CONSIDERATION OF THE LOAN OF TH
ISES AND AGREES TO RETURN IT UPON REQUEST AND THAT IT SH
LENT OR OTHERWISE DISPOSED OF DIRECTLY OR INDIRECTLY
CONSENT NOR BE USED IN ANY WAY DETRIMENTAL TO THE INTERES

ISSUED FOR CONSTRUCTION
BY … DATE …
CUSTOMER AP

DESIGNED
DRAWN R. SUTTON
REVIEWED D.L. DELA

FOR E G P C
AT RAS SHUKHEIR

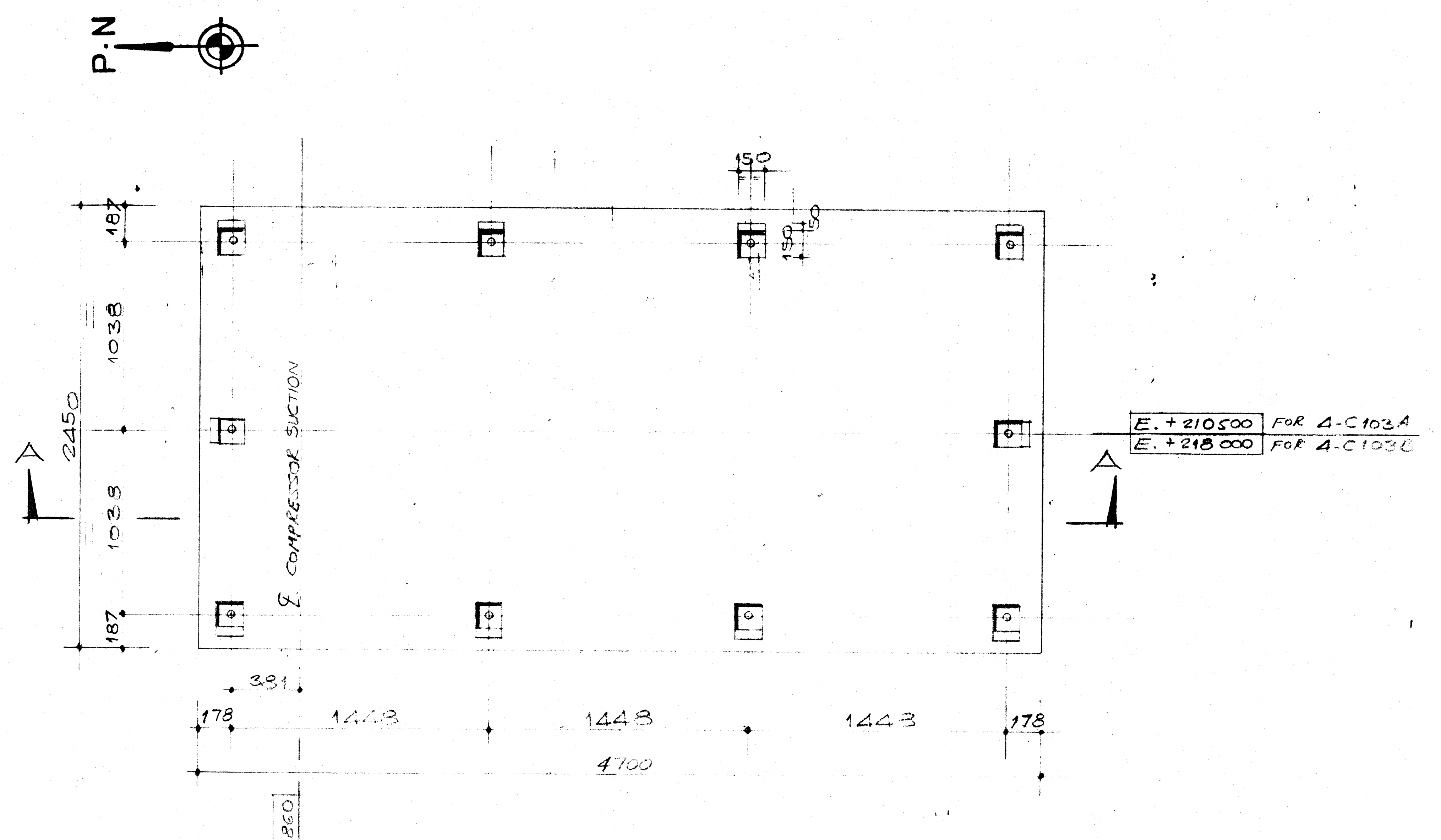
GULF OF SUEZ GAS P
GAS SWEETENING
AREAS 3F & 3H
FOUNDATION FOR SKI

…سه للصناعات البتروليه والكيماويه

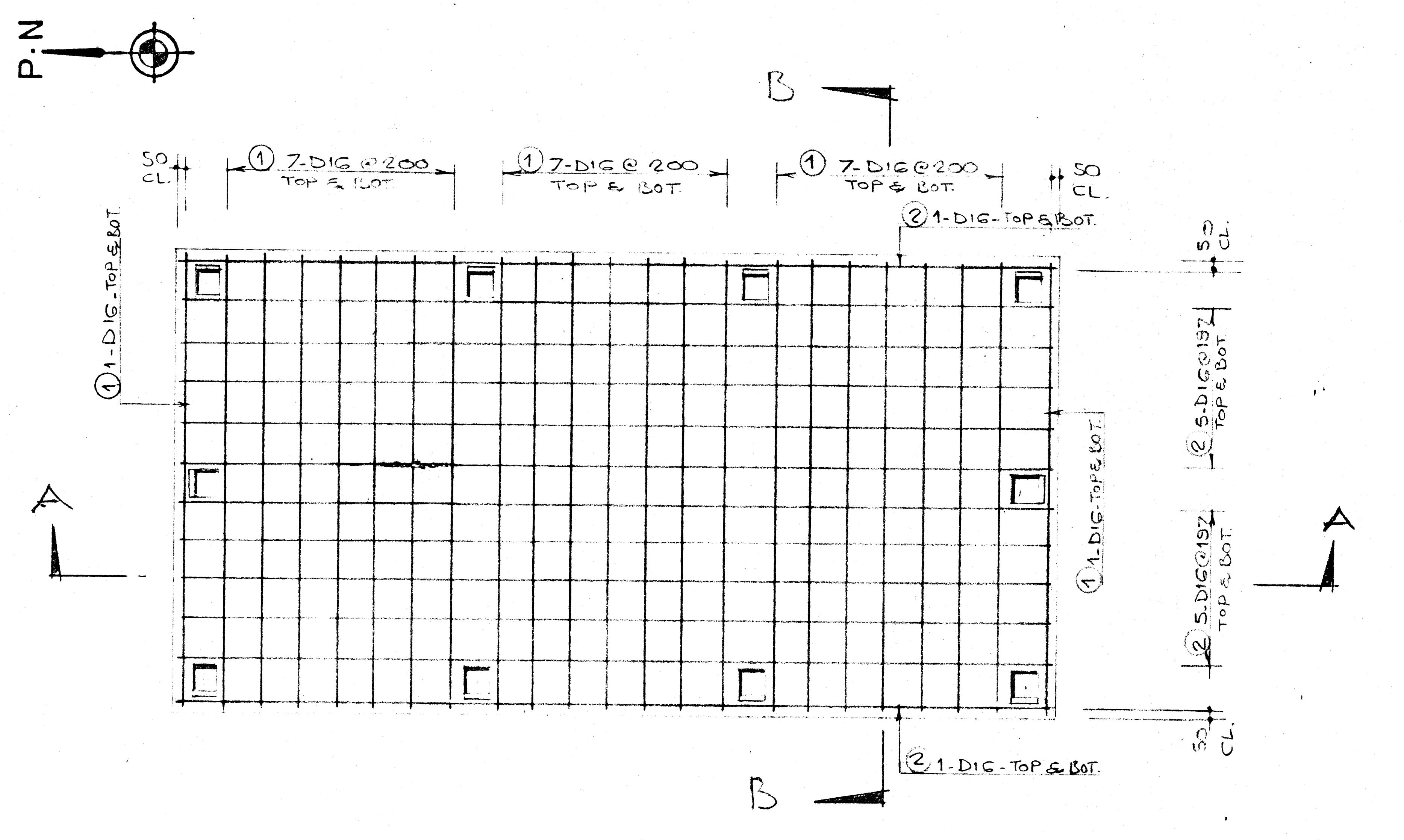
Enppi

ENGINEERING FOR THE PETROLEUM AND PR… RIE

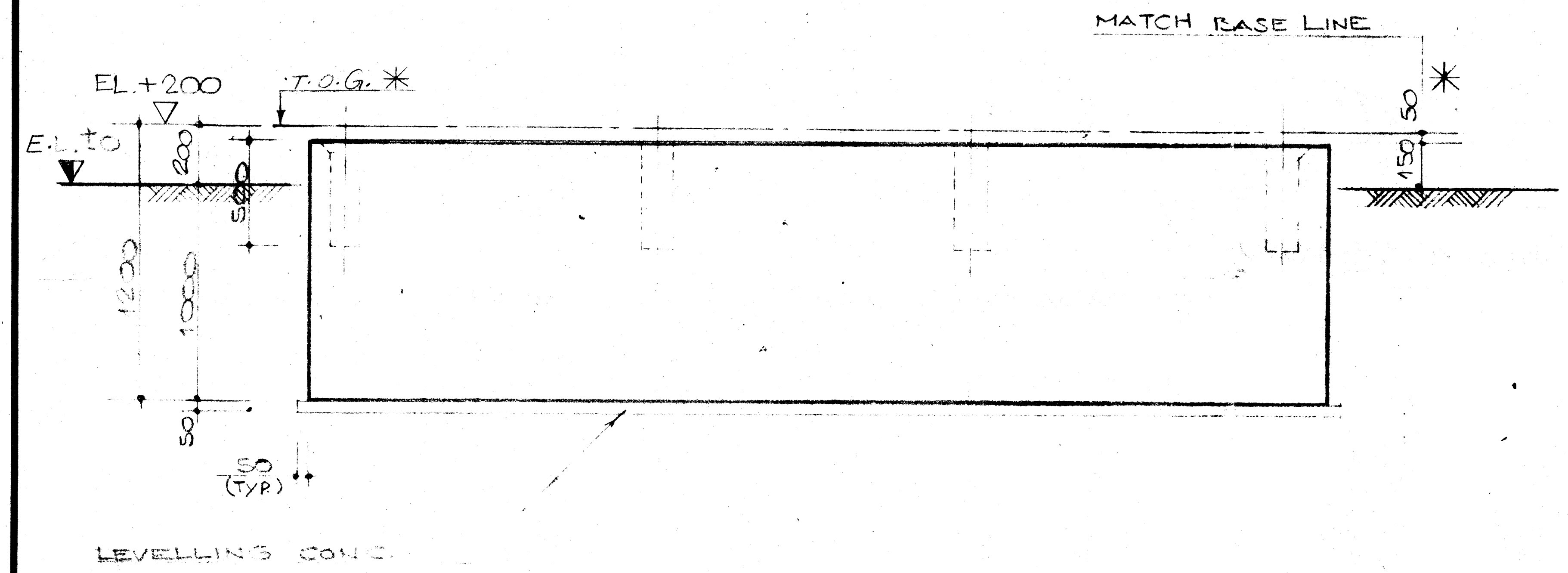
SCALE 1:50 U.N.
DATE 6-3-81
DRAWING NUMBER 9211-104-FD-



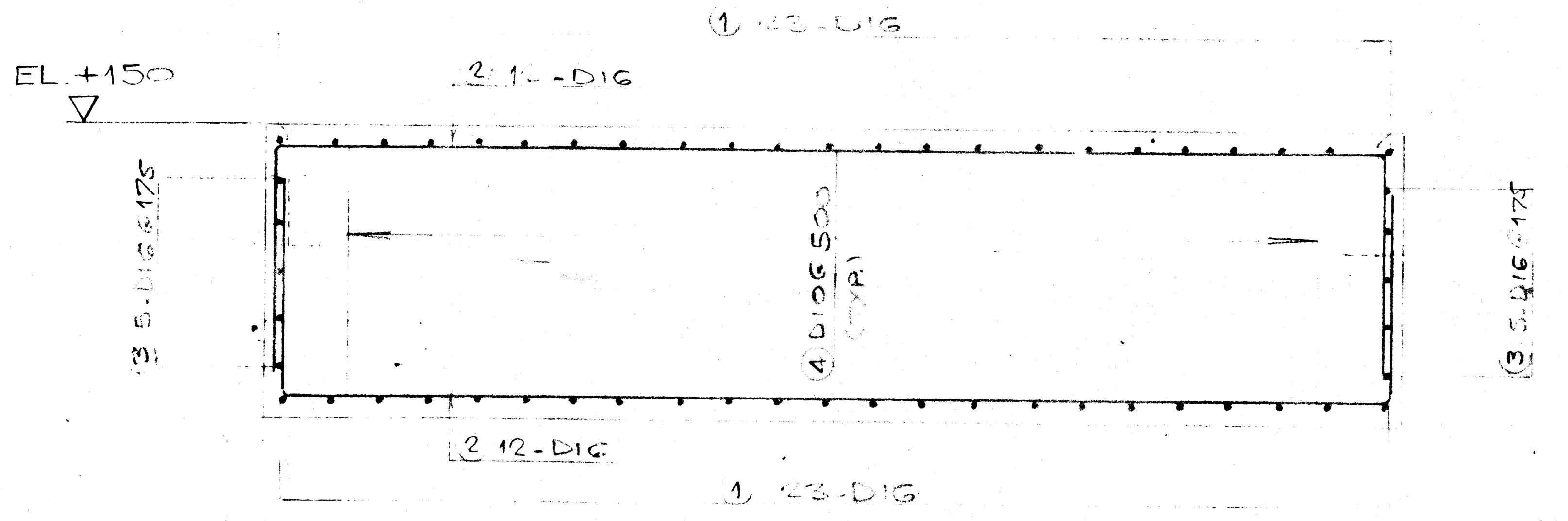
FORMWORK PLAN



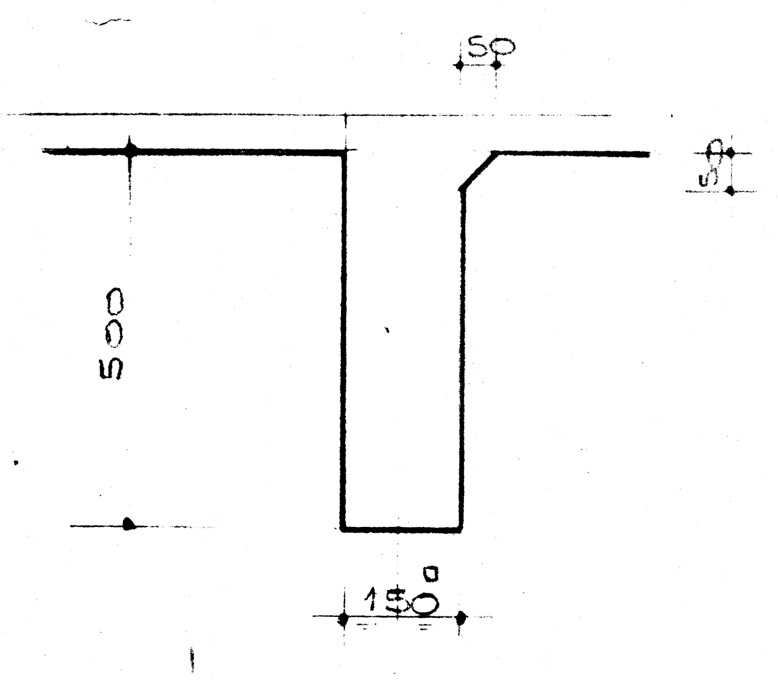
REINFORCEMENT PLAN



SECTION A.A.

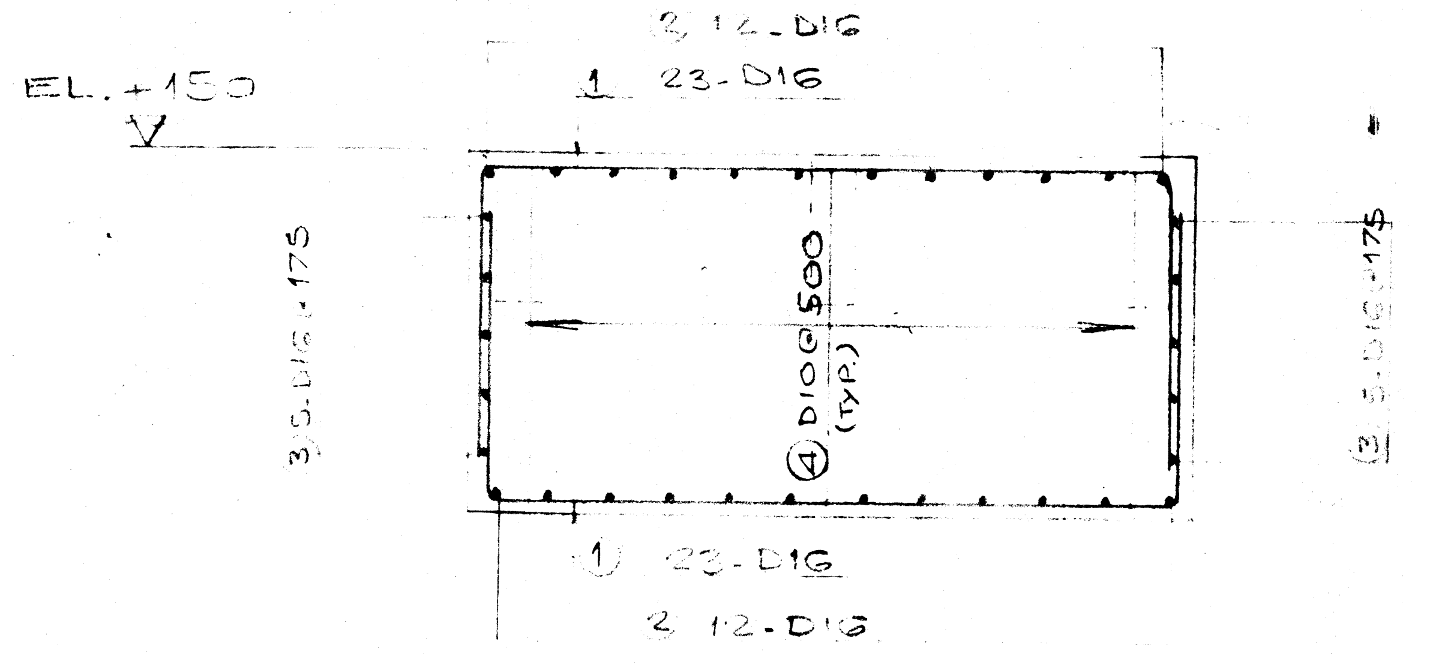


SECTION A.A.



TYPICAL, ANCHOR BOX DETAIL

SCALE: 1/10



SECTION B.B.

BAR BENDING SCHEDULE

ITEM	A	B	C	D	E	F	G	H
4-C103 A/B	①	16	SEE PLAN	4050	46	2	92	850 2350 850
	②	16	SEE PLAN	6300	24	2	48	850 4600 850
	③	16	175	7590	10	2	20	2620 2620
	④	10	500	1550	50	2	100	250 1050 250

REFERENCE D

NAME OF DRAWINGS		
FOUND. LOCATION PLAN	G	001 002
CONCRETE SPECS	G	
CONCRETE ACC	G	0
SHIM & GROUTING	G	7

NOTES:

1. ALL DIMENSIONS
2. GL.±0 = EL. + 2
3. ✱ NON SHRINK GR
USED (SUPPLIED
CONTRACTOR)

4.

BE

ON

Enppi
APPROVED
DATE

NOTES

A. MARK OF REINFO
B. DIAMETER OF REINFO
C. PITCH.
D. STRAIGHTENED LENGTH
E. NUMBER OF REINFORCEM
F. NUMBER OF ELEME
G. TOTAL NUMBER OF
H. FIGURE

LIST OF MA

DESCRIPTION	UNI		REI
REINFORCED CONC	M		
LEVELLING CONC.	M		
FORMWORK	M		
EXCAVATION	M		
BACK FILLING	M		
BAR - D10	KG		
BAR - D16	K		

ISSUE	DESCRIPTION	CHKD
4		
3		
2		
1		
0	ISSUED FOR APPROVAL	

Enppi

06291401

GULF OF SUEZ GAS PL

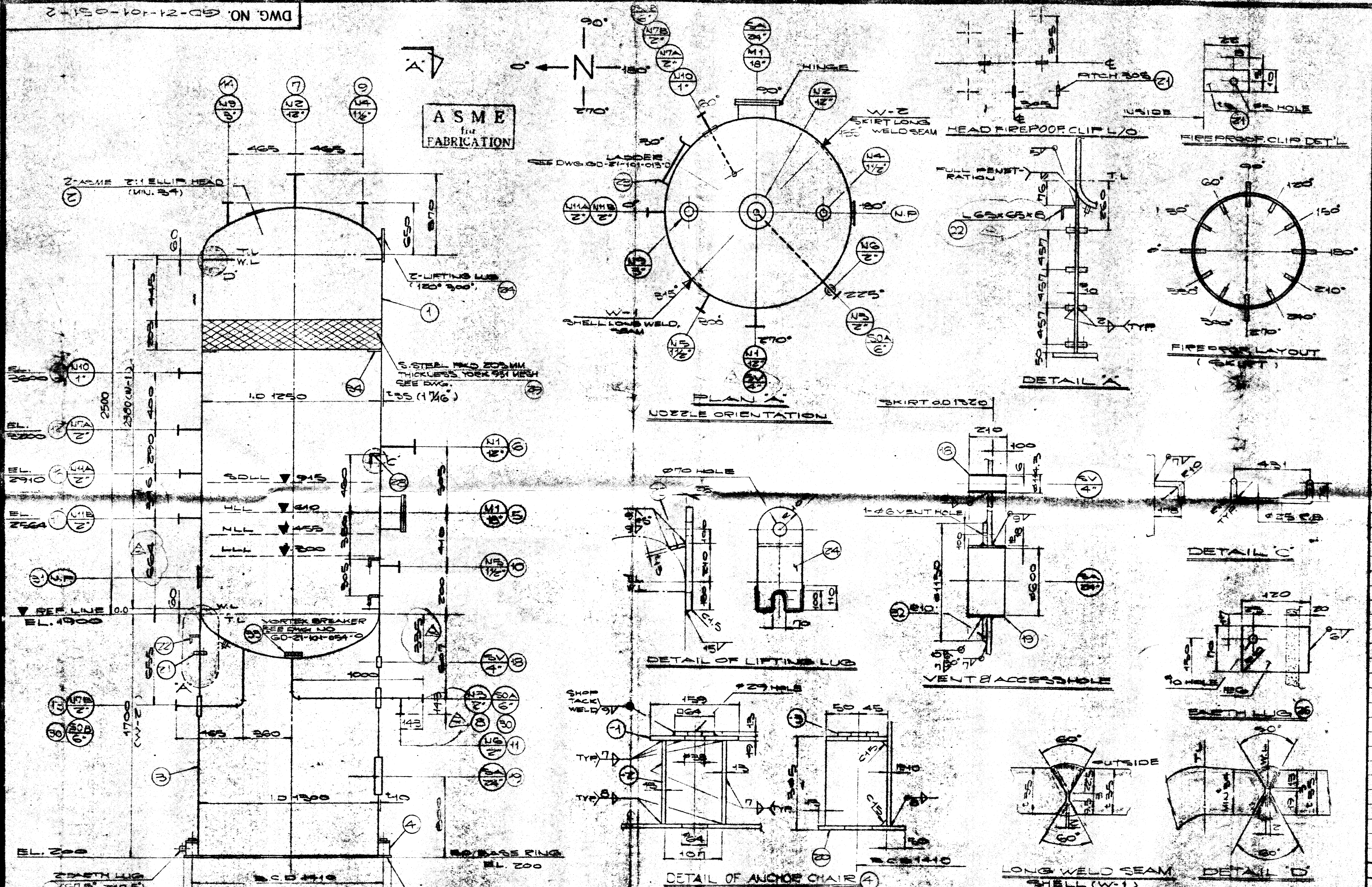
FOUNDATION DE
COMPRESSOR

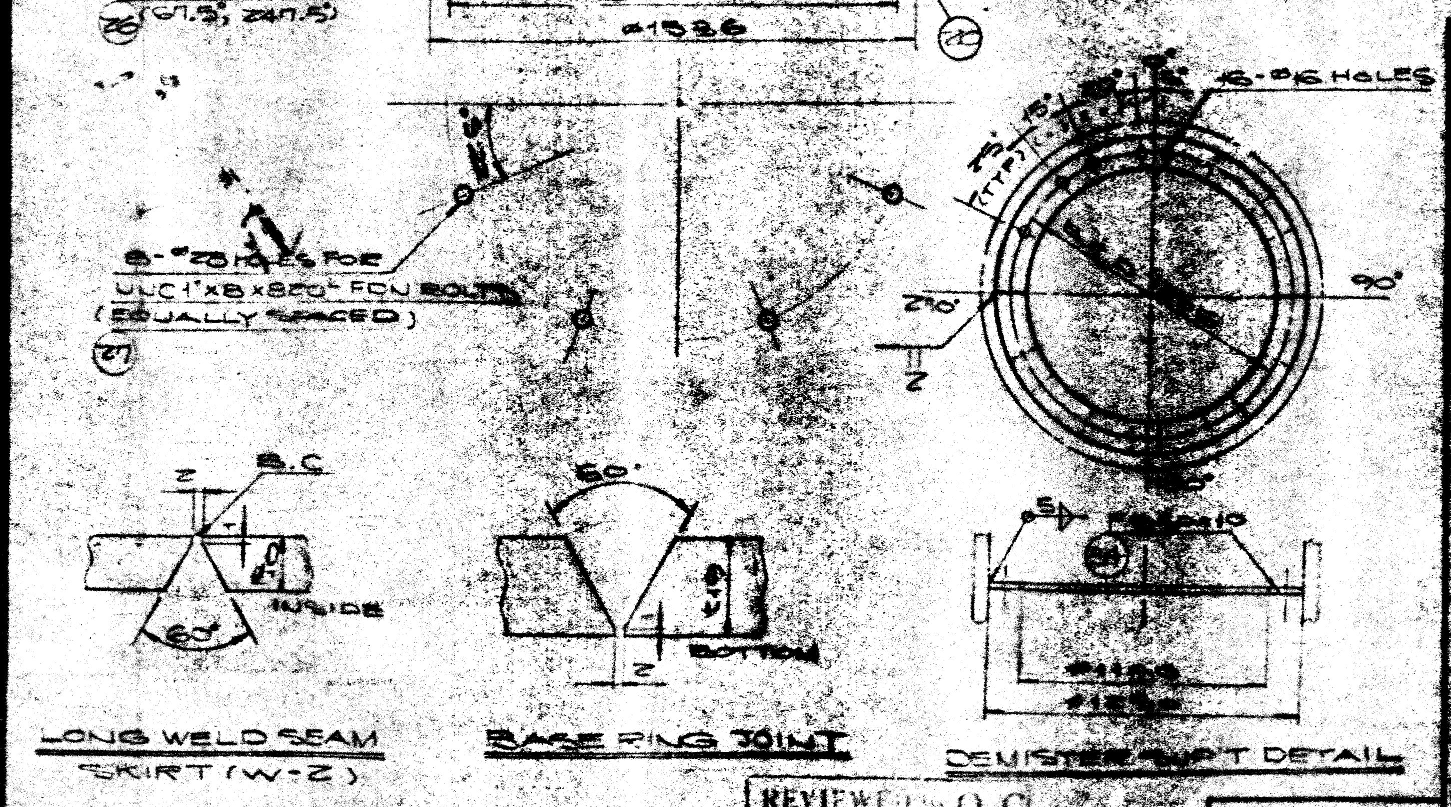
Hitachi Zosen
CIVIL ENGINEERING DEPARTMENT
OSAKA, JAPAN

DATE MARCH / 9 / 1986

DWG. No.

SHEET No GOS-A




8-ø29 HOLES FOR 1 1/4"x8x820 FDN BOLTS (EQUALLY SPACED)
16-ø16 HOLES
LONG WELD SEAM SKIRT (W-2)
BASE RING JOINT
DEMISTER SUP'T DETAIL

REVIEWED by Q.C

PRODUCTION ORDER NO.
15-1920-1-4/5

TYPE: FC - A100

NOTES

1. SURFACE PREPARATION
   COMMERCIAL BLAST NEAR WHITE.
2. PAINTING
   a) PRIME - SELF CURING ETHYL SILICATE INORGANIC ZINC 1 COAT 2 1/2 MILS.
   b) FINISH - POLYAMID EPOXY HIGH BUILD ENAMEL 1 COAT 5 MILS (BY OTHERS)
3. FIELD HYDRO TEST DENOTES FUTURE CORRODED CONDITION.

MATERIAL LIST

NO.	DESCRIPTION	MAT'L	Q'TY	SIZE	REMARKS.
34	SUPPORT PL	A516-70	1	FB 50x10	
33	VORTEX BREAKER		1 SET	SEE DWG GD-21-101-054-0	
32	PAD	A283C	1	PL 10 x O.D 1150 x I.D 638	
31	NAME PLATE	A240-304	1	SEE DWG	
30	SKIRT OPENING	A106B	2	6" x SCH 40 - L 260	GD-21-101-013-0
29	DEMISTER	A240-304	1	THK 203 YORK 931 MESH	
28	LADDER RUNG	A36	3	RB 25	
27	FOUNDATION BOLT	A325	8 SETS	1-8UNC x 820 L	TYPE '3'
26	EARTH LUG	A240-304	2	PL 6 x 70 x 120	
25	BRACKET	A283C	2	PL 13	
24	LIFTING LUG	A283C	2	PL 25 x 200 x 590	
23	LADDER		1 SET	SEE DWG. GD-21-[illegible]	
22	ANGLE	A36		L 65 x 65 x 8 - L 2451	
21	FIREPROOF CLIP	A283C	[illegible]	PL 3 x 22 x 10	
20	BASE PLATE	A283C	1	PL 13 x I.D 1536 x O.D 1220	
19	ACCESS HOLE	A283C	1	PL 13 x 210 x L 1041	
18	SKIRT VENT	A106B	1	4" SCH 40 x L 210	
17	LEVEL SWITCH			2" SCH 160	GD-21-101-052-0
16	LEVEL SWITCH			2" SCH 160	
15	PRESS. INDIC.			1" SCH XX-STG.	
14	SAFETY VALVE			3" SCH 160	
13	BRIDLE			2" SCH 160	
12	BRIDLE			2" SCH 160	
11	DRAIN			2" SCH 160	
10	UTILITY			1 1/2" SCH 160	
9	VENT			1 1/2" SCH 160	SEE DWG
8	LIQ. OUTLET			2" SCH 160	
7	VAP. OUTLET			2" SCH 160	
6	VAP. INLET	A106B		2" SCH 160	
5	MANHOLE	A516-70	1	PL 21 W/ COVER & HINGE	GD-21-101-052-0
4-3	WASHER	A283C	1	PL 15 x 64 x 64	
4-2	BRACKET	A283C	2	PL 13 x 95 x 254	
4-1	UPPER RING	A283C	1	PL 10 x 95 x 159	
4	ANCHOR CHAIR		8 SETS		
3	SKIRT	A283C	1	PL 10	
2	HEAD	A516-70	2	I.D 1250 x MIN t 34	ASME 2:1 ELLIP
1	SHELL	A516-70	1	PL 35 x 2380 x 4037 L	

REVISIONS

NO.	DESCRIPTION	DATE	PR'D	CHK'D	APP'D
△					
△					
△2	REVISED BY AIOC COMMENTS	'81.8.20		Y.K.SIN	
△1	REVISED BY AIOC COMMENT	'81.7.23			
△0	ISSUED FOR APPROVAL	'81.7.4		Y.K.SIN	

DESIGN DATA

CODE: ASME SEC VIII DIV 1	
CAPACITY: 3.5 m³	TYPE: SKIRT
FLUID:	NO. OF REQ'D: 2 (TWO)
OPERATING TEMPERATURE	45 °C
OPERATING PRESSURE	48.7 kg/cm²G
DESIGN TEMPERATURE	73 °C
DESIGN PRESSURE	59 kg/cm²G
HYDRO. TEST PRESSURE (SHOP)	99.94 kg/cm²G
HYDRO. TEST PRESSURE (FIELD)	90.64 kg/cm²G
WIND PRESSURE	100 kg/m²
SPECIFIC GRAVITY	0.61
CORROSION ALLOWANCE	3 mm
POST WELD HEAT TREATMENT	YES
JOINT EFFICIENCY	100 %
RADIOGRAPHIC	FULL
EARTHQUAKE FACTOR	—
INSULATION	NO mm
PAINTING	SEE NOTE 1, 2
MAWP (NEW • COLD)	66.63 kg/cm²G
MAWP (CORRODE)	60.43 kg/cm²G

WEIGHT (kg)		
	EMPTY	6674
	OPERATING	7786
	FULL OF WATER	10543

NOZZLE AND CONNECTIONS

REVIEWED by

FINAL

MARK	REQ'D	SIZE	SCH	RATING	SERIVICE	℄ TO FACE	REMARKS
SO	2	6"	40		SKIRT OPENING		GD-21-101-052-0
SV	1	4"	40		[illegible]		
SA	1	24"	B18		ACCESS [illegible]		
[illegible]	2	2"	160	#600 [illegible]	LEVEL [illegible]		GD-21-101-052-0
N10	1	1"	XXSTG		PRESS. INDIC.	835	
N9		3"	160		SAFETY VALVE	[illegible]	
N7B		2"	160		BRIDLE	835	
N7A		2"	160		BRIDLE	835	
N6		2"	160		DRAIN	[illegible]	
N5		1 1/2"	160		UTILITY	835	
N4		1 1/2"	160		VENT	[illegible]	SEE DWG
N3		2"	160		LIQ. OUTLET	1000	
N2		2"	80		VAP. OUTLET	[illegible]	
N1		2"	160		VAP. INLET	075	
M1	1	16"	221	#600 [illegible]	MANHOLE	075	GD-21-101-052-0

CUSTOMER
DAELIM ENG'G CO., LTD.

TITLE OF PROJECT
GULF OF SUEZ GAS PROJECT
RAS SHUKEIR, EGYPT

KHIC KOREA HEAVY INDUSTRIES & CONSTRUCTION CO., LTD.

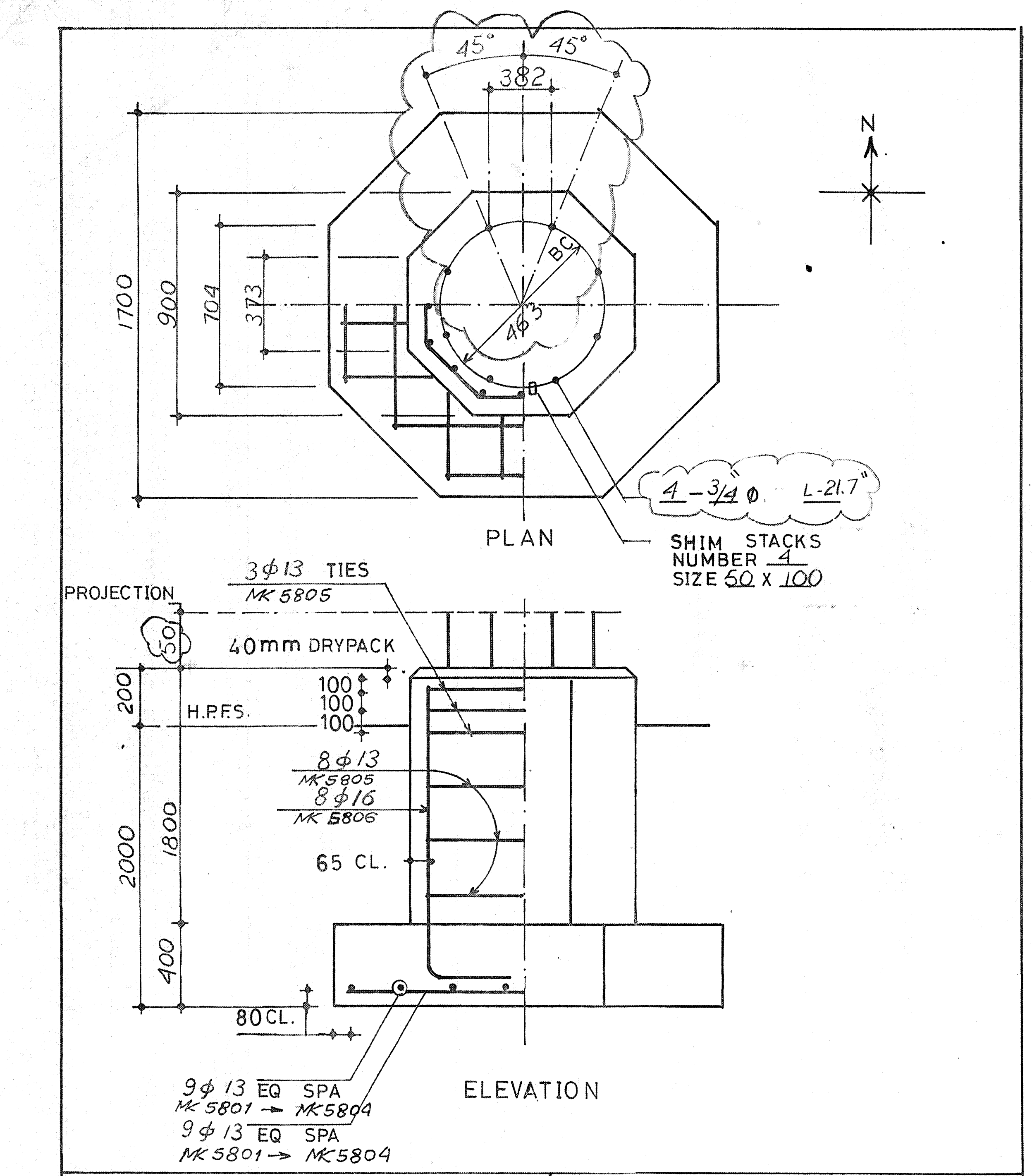
	BY	DATE
APPROVED	D.K. Lee	81.7.16
CHECKED	Y.K.SHIN	81.7.15
DESIGNED		81.7.15
DRAWN		81.6.30

ITEM NO.
4-V4 A.B

ASSEMBLY & DET'L DWG FOR AFTER SEPARATOR

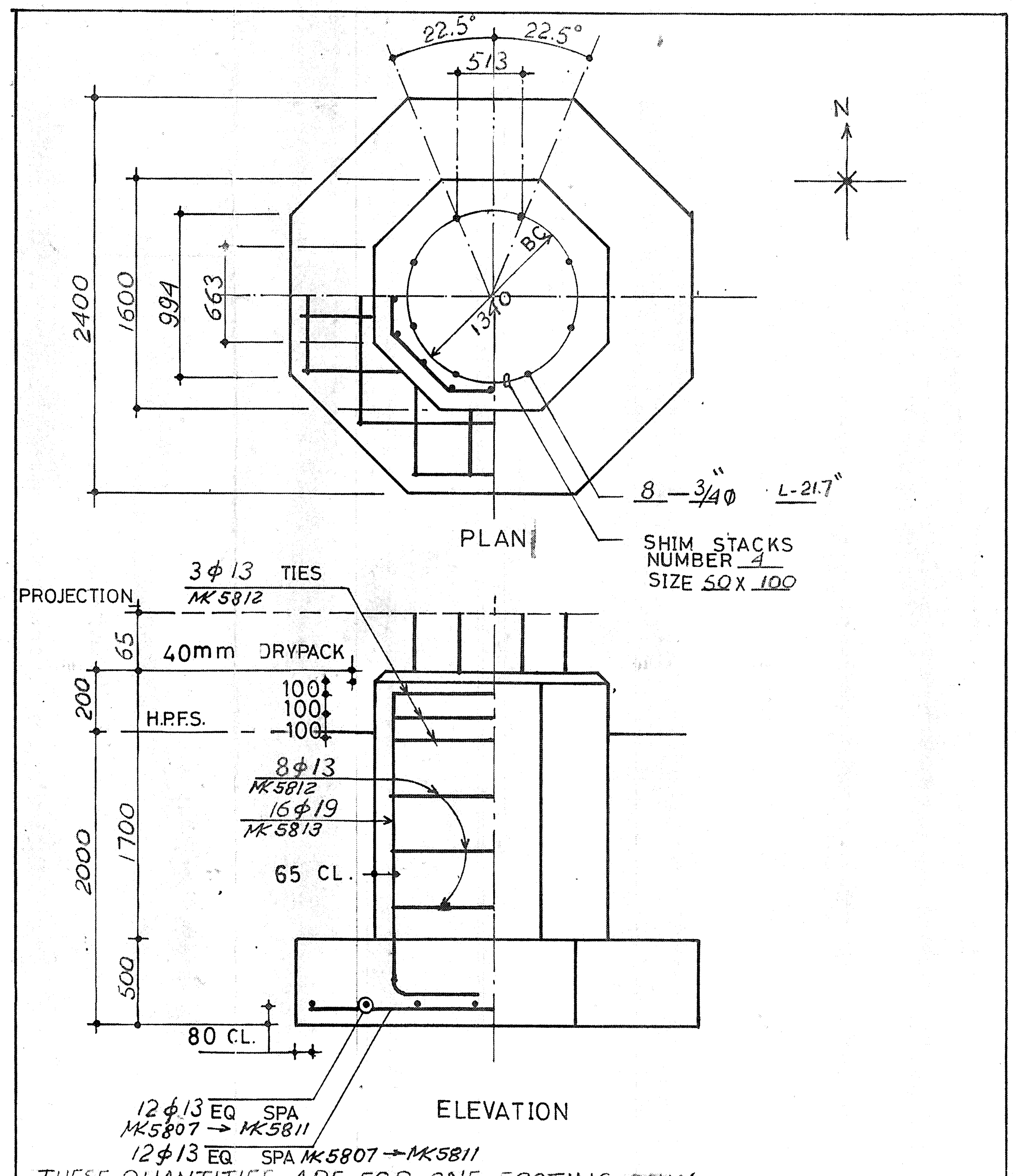
SCALE	DWG. NO.	SHEET NO.	REV.
—	GD-21-101-051-2	1/5	△2

SIZE 594 mm × 841 mm A1



CONCRETE AND REINFORCEMENT	ANCHOR BOLTS AND SHIMS
PAD 1.00 CU METER CONCRETE PIER 1.20 CU METER CONCRETE 35 KGS OF φ16 & 60 KGS OF φ13	4-3/4"φ L-21.7" ANCHOR BOLTS — φ — ANCHOR BOLTS 4 SHIM STACKS 50 X 100

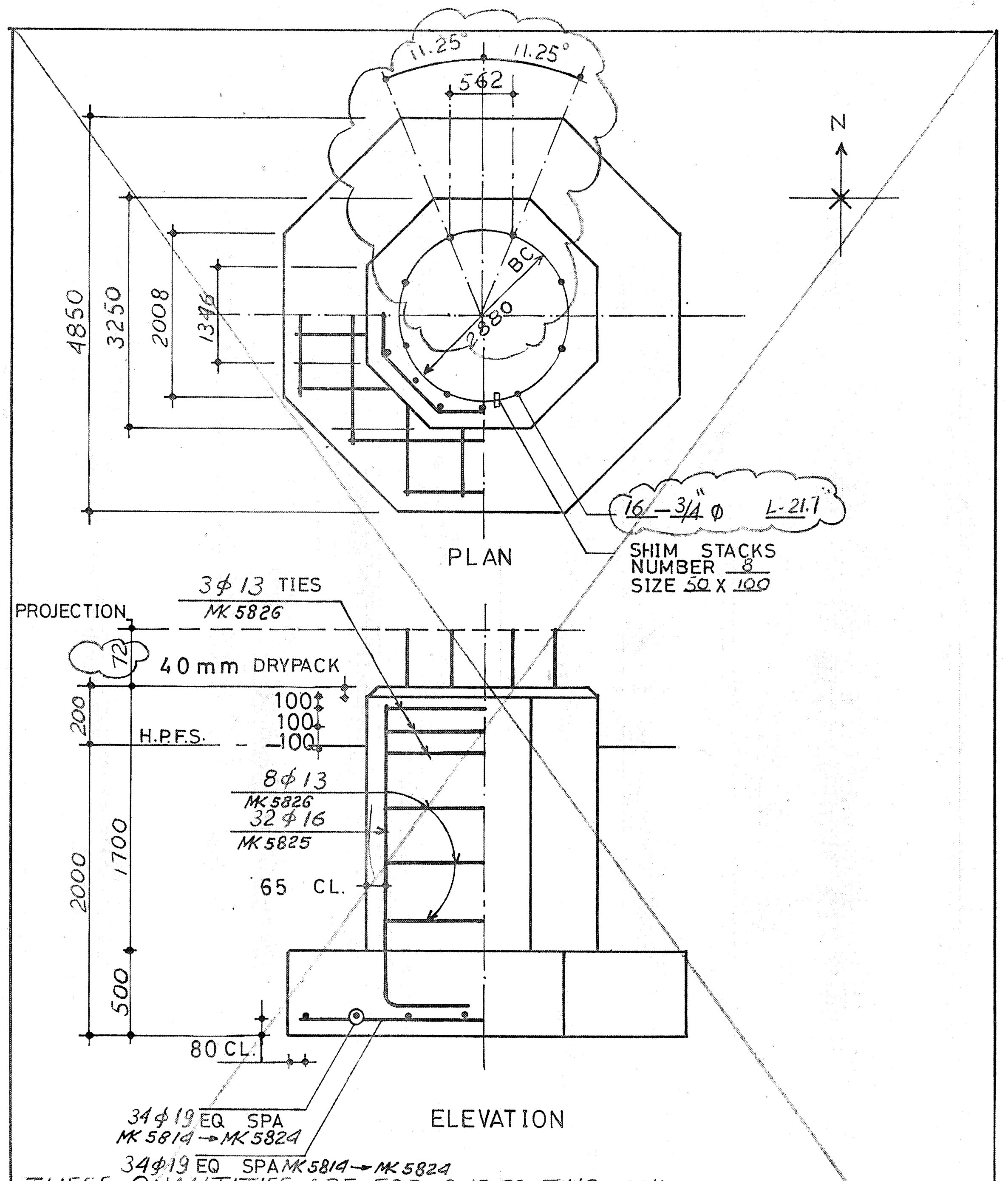
FOR GENERAL NOTES SEE DWG	THIS ITEM CHANGED BY REVISION	2
UNIT 104	ITEM 4-V15	



THESE QUANTITIES ARE FOR ONE FOOTING ONLY

CONCRETE AND REINFORCEMENT	ANCHOR BOLTS AND SHIMS
PAD 2.40 CU METER CONCRETE PIER 3.60 CU METER CONCRETE 100 KGS OF φ19 & 105 KGS OF φ13	8-3/4"φ L-21.7" ANCHOR BOLTS — φ — ANCHOR BOLTS 4 SHIM STACKS 50 X 100

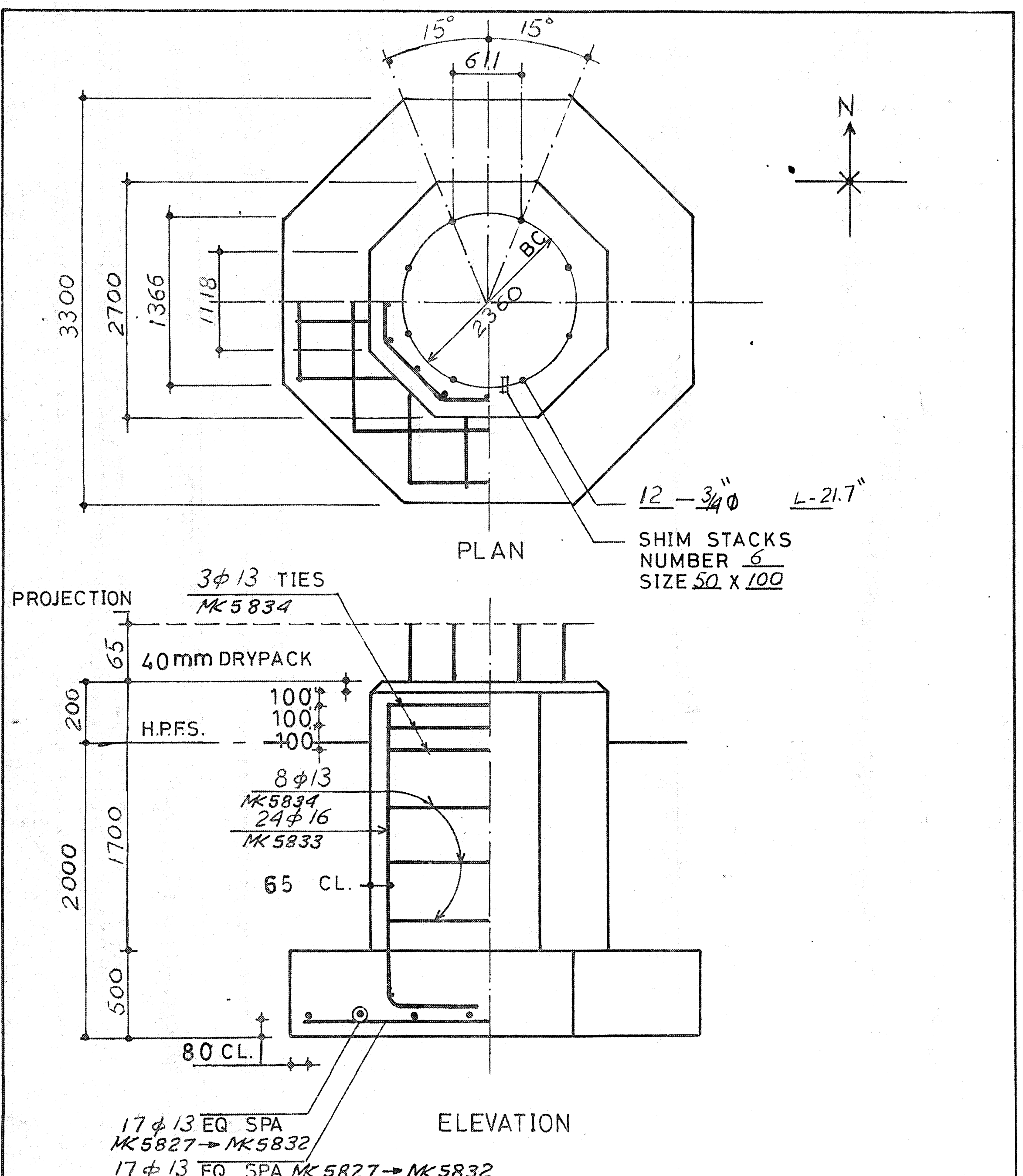
FOR GENERAL NOTES SEE DWG	THIS ITEM CHANGED BY REVISION	2
UNIT 104	ITEM 4-V16 A,B,C	



THESE QUANTITIES ARE FOR ONE FOOTING ONLY

CONCRETE AND REINFORCEMENT	ANCHOR BOLTS AND SHIMS
PAD 9.80 CU METER CONCRETE PIER CU METER CONCRETE 550 KGS OF φ19 & 135 KGS OF φ16 & 120 KGS OF φ13	16-3/4"φ L-21.7" ANCHOR BOLTS — φ — ANCHOR BOLTS 8 SHIM STACKS 50 X 100

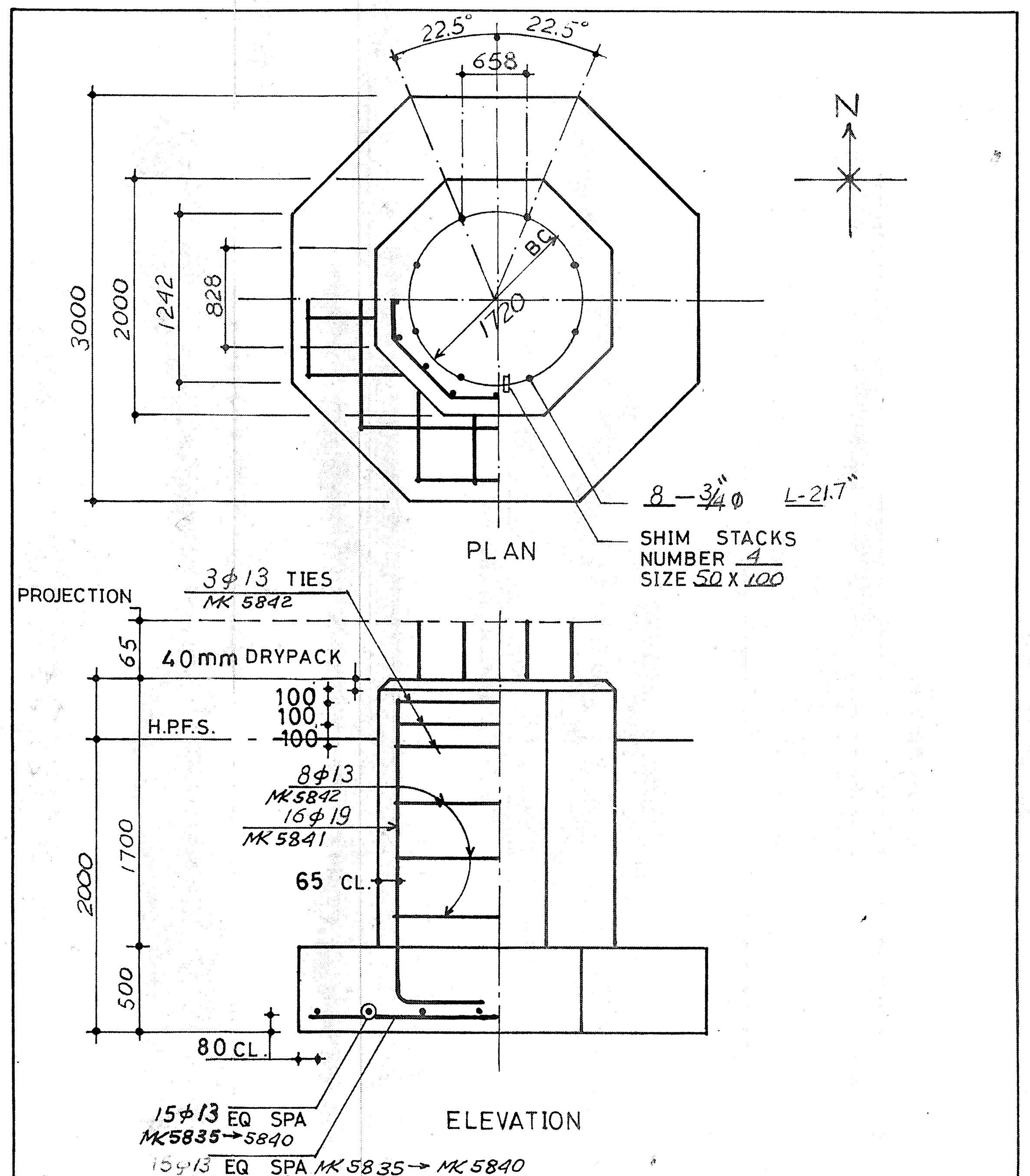
FOR GENERAL NOTES SEE DWG	THIS ITEM CHANGED BY REVISION	2
UNIT 104	ITEM 4-D1 A,B,C	



THESE QUANTITIES ARE FOR ONE FOOTING ONLY

CONCRETE AND REINFORCEMENT	ANCHOR BOLTS AND SHIMS
PAD 4.50 CU METER CONCRETE PIER 10.30 CU METER CONCRETE 100 KGS OF φ16 & 190 KGS OF φ13	12-3/4"φ L-21.7" ANCHOR BOLTS — φ — ANCHOR BOLTS 6 SHIM STACKS 50 X 100

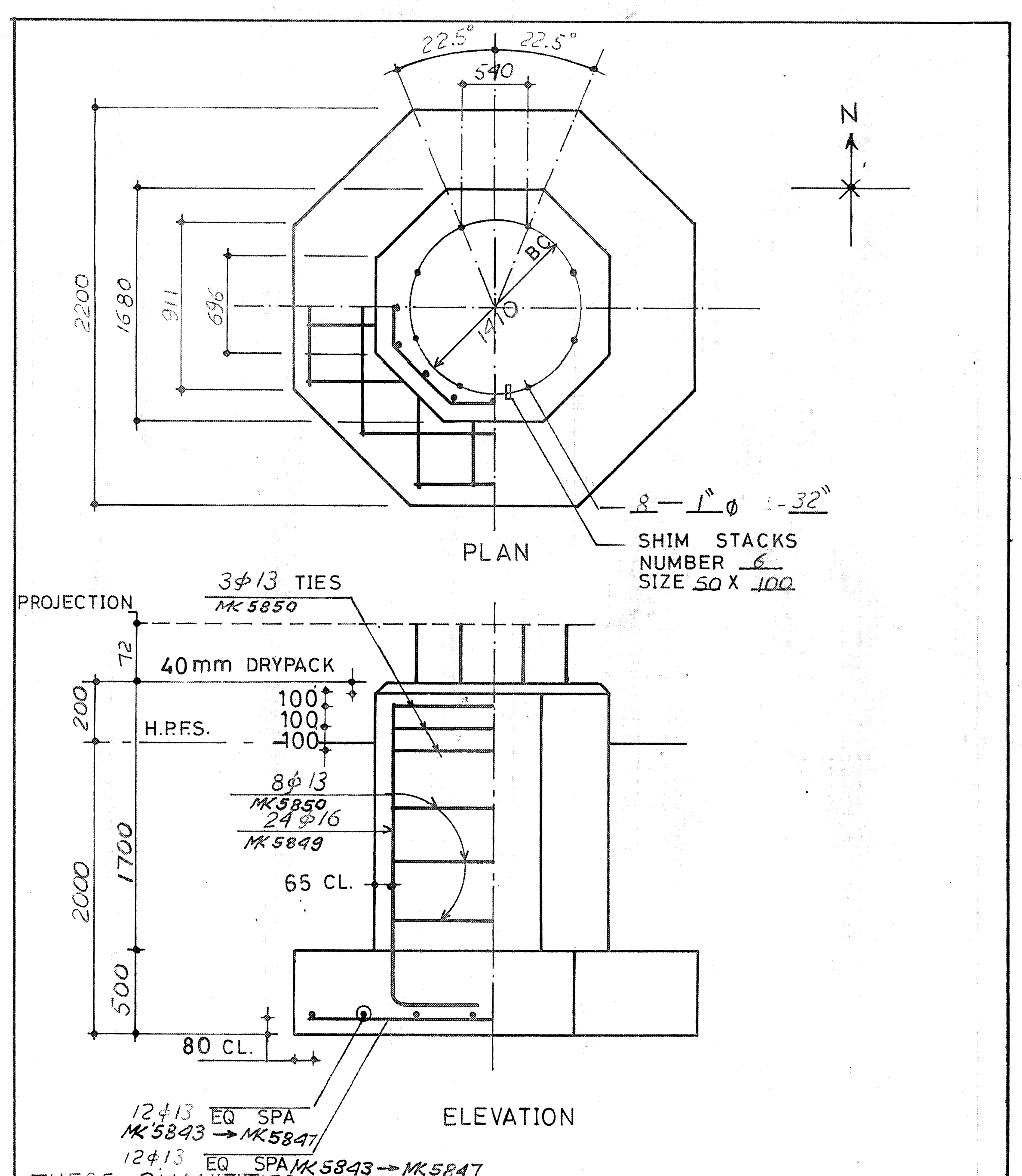
FOR GENERAL NOTES SEE DWG	THIS ITEM CHANGED BY REVISION	2
UNIT 104	ITEM 4-V2 A,B	



THESE QUANTITIES ARE FOR ONE FOOTING ONLY

CONCRETE AND REINFORCEMENT	ANCHOR BOLTS AND SHIMS
PAD 3.75 CU METER CONCRETE PIER 5.70 CU METER CONCRETE 100 KGS OF φ19 & 150 KGS OF φ13	8-3/4"φ L-21.7" ANCHOR BOLTS — φ — ANCHOR BOLTS 4 SHIM STACKS 50 X 100

FOR GENERAL NOTES SEE DWG	THIS ITEM CHANGED BY REVISION	2
UNIT 104	ITEM 4-V3 A,B	



THESE QUANTITIES ARE FOR ONE FOOTING ONLY

CONCRETE AND REINFORCEMENT	ANCHOR BOLTS AND SHIMS
PAD 2.00 CU METER CONCRETE PIER 4.00 CU METER CONCRETE 100 KGS OF φ16 & 115 KGS OF φ13	12-3/4"φ L-21.7" ANCHOR BOLTS — φ — ANCHOR BOLTS 6 SHIM STACKS 50 X 100

FOR GENERAL NOTES SEE DWG	THIS ITEM CHANGED BY REVISION	3
UNIT 104	ITEM 4-V4 A,B	

NUMBER	REFERENC
9211-100-300-2	CONCRETE
9211-100-300-6	CONCRETE ACCESSORI
9211-100-300-7	SHIM AND GROUTING
9211-104-KE-401	PLOT PLAN
————	SOIL REPORT
9211-B-104-FD-58	BAR LIST SHEET 1&2

GENERAL NOTES

1 _ HIGH POINT FINISHED SURFACE (H.P.F.S.) = EL
2 _ FOR LOCATION OF FOUNDATIONS SEE DRAWIN
3 _ EACH ITEM FOUNDATION IS ORIENTED BY INDIV
4 _ FOR DETAILS OF ANCHOR BOLTS SEE S
5 _ SOIL REPORT SHOULD BE STRICTLY FOLL
6 _ CONCRETE FOOTINGS ARE CLASS 'A' CON
7 _ CONCRET FOOTINGS TO BE UNDERLAYE CLASS 'D' CONCRETE BLINDING

HOLD VENDOR DRAWING IS NOT SUBM

ESTIMATED MATERIAL	0	1
R.C (M³)	155	+9
REINFORCING BARS (TON)	4.2	+0.2
3/4"φ L-21.7" ANCH. BOLTS	88	+52
1"φ L-21.7" ANCH. BOLTS	40	-40
50X100 MM SHIM STACKS	66	+6
1"φ L-32" ANCH. BOLTS	0	0

No 6 — V
Book — 4-

REV	DATE	DESCRIPTION	BY	CH
3	8/12/81	- 4-D1 A,B,C WAS CANCELLED - 4-V4 A,B WAS CHANGED	N.M	
2	3/15/81	REVISED AS SHOWN	NM	
1	12/22/80	ISSUED FOR CONSTRUCTION	N.M	
0	9/28/80	ISSUED FOR APPROVAL	N.M	

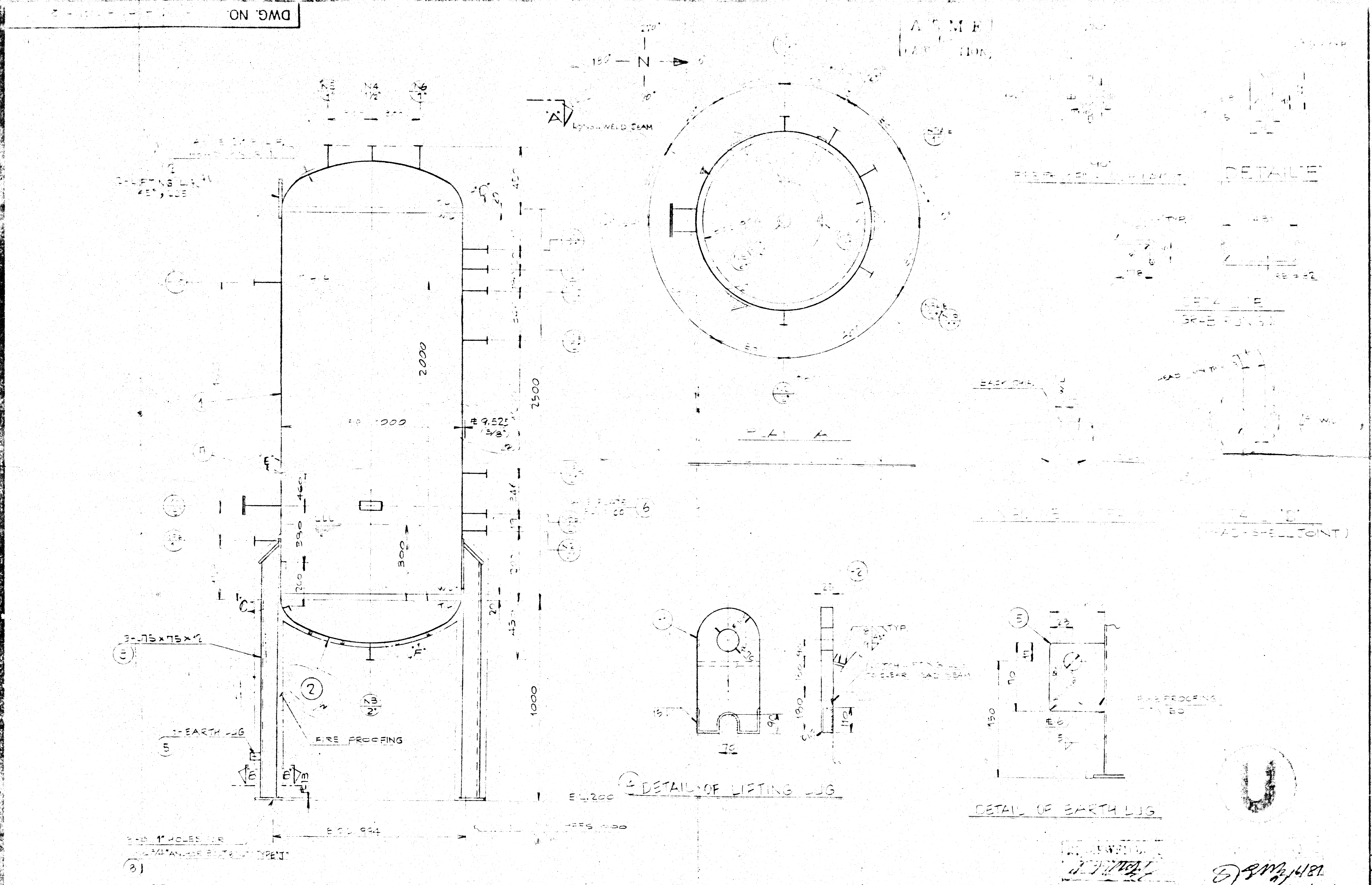
NOTICE
THIS DRAWING HAS NOT BEEN PUBLISHED. IT IS THE SOLE PROPERTY OF BRAU
IT IS LENT TO THE RECIPIENT FOR HIS CONFIDENTIAL USE ONLY, AND U
AGREEMENTS FOLLOWING. IN CONSIDERATION OF THE LOAN OF THIS DRAW
ISES AND AGREES TO RETURN IT UPON REQUEST, AND THAT IT SHALL NOT
LENT, OR OTHERWISE DISPOSED OF, DIRECTLY OR INDIRECTLY WITHOUT
CONSENT, NOR BE USED IN ANY WAY DETRIMENTAL TO THE INTERESTS OF BR.

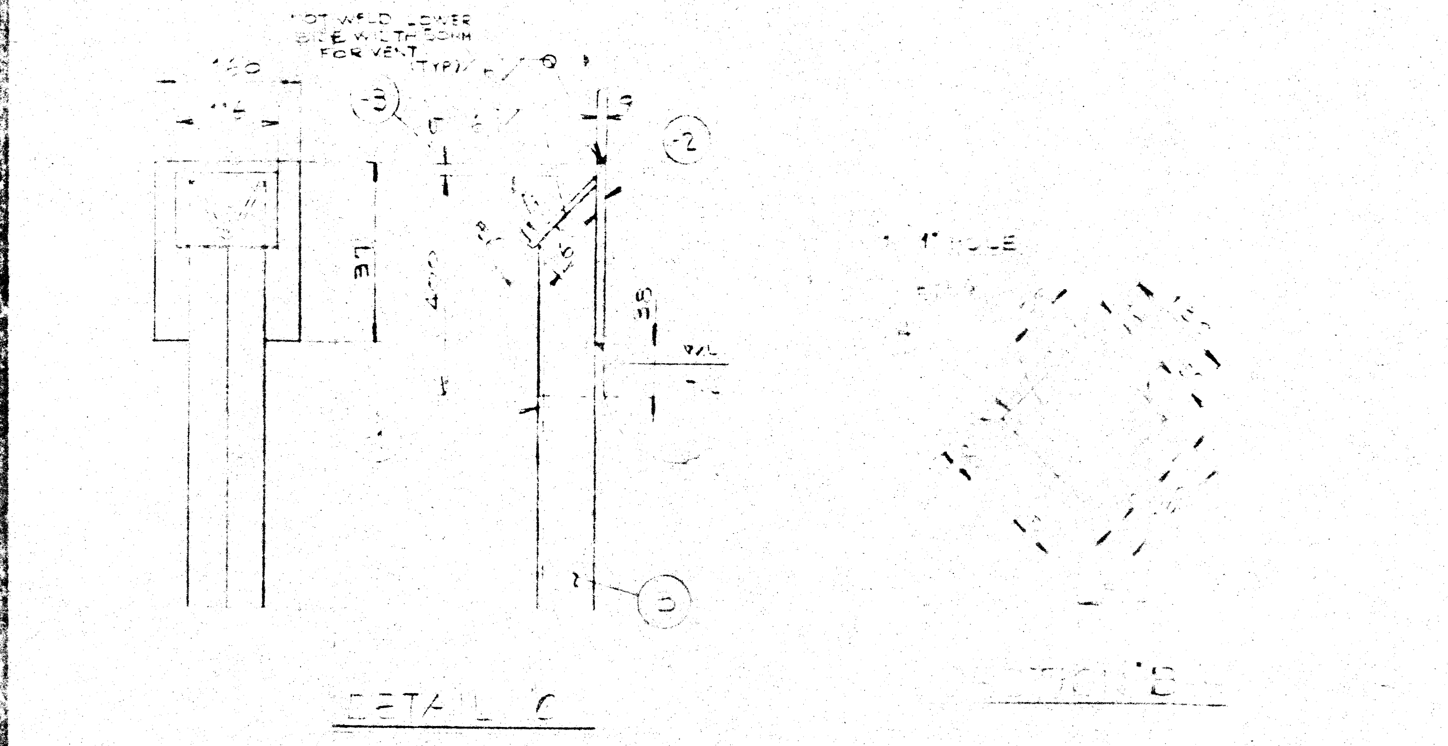
ISSUED FOR CONSTRUCTION
BY M.S DATE 12-22-80
CUSTOMER APPROVAL
DESIGNED M. HAZEM
DRAWN Nemi
REVIEWED M.K
FOR E.G.P.C
AT RAS SHUKHEIR

GULF OF SUEZ GAS PR
MAIN PROCESSING PLAN
VERTICAL VESSEL FOUNDA
4-V3, 4-V4, 4-V15, 4-V16

لهندسية للصناعات البترولية والكيماوية
Enppi
ENGINEERING FOR THE PETROLEUM AND PROCESS

SCALE NONE
DATE 9-28-80
DRAWING NUMBER 9211-104-FD-
3





8/23/81

DESIGN DATA

CODE : ASME SEC VIII DIV. 1		
CAPACITY : 2.2 m³	TYPE : VERTICAL	
FLUID : POTABLE WATER	NO. OF REQ'D	1 (ONE)
OPERATING TEMPERATURE	35	°C
OPERATING PRESSURE	[illegible]	kg/cm²G
DESIGN TEMPERATURE	43	°C
DESIGN PRESSURE	6.2	kg/cm²G
MAX. ALLOWABLE W.P.	[illegible]	kg/cm²G
PNEUM. TEST PRESSURE	6.31	kg/cm²G
WIND LOAD (ASSUMED)	250	kg/m²
[illegible] PRESSURE (SHOP)	[illegible]	kg/cm²G
CORROSION ALLOWANCE	5.0	mm
POST WELD HEAT TREATMENT	NO	
JOINT EFFICIENCY	85	
RADIOGRAPHIC	SPOT	
EARTHQUAKE FACTOR	-	
INSULATION	[illegible]	mm
PAINTING	SEE NOTE	
SPECIFIC GRAVITY	1.0	
[illegible] TEST PRESSURE FIELD	[illegible]	
WEIGHT	EMPTY	[illegible]
	OPERATING	3245
	WATER	

NOZZLE AND CONNECTIONS

MARK	REQ'D	SIZE	SCH.	RATING	SERVICE		REMARKS
M1	1	18"	[illegible]	ANSI 150# RF	MANHOLE		
N10	1	1"			PRESS. INDICAT		
N9A/B	2	1"			LEVEL GAGE		
N8A/B	2	2"			LEVEL SWITCH		
N7A/B	2	2"			LEVEL SWITCH		
N6	1	1"			SAFETY VALVE		
N5	1	1"			AIR INLET		
N4	1	1 1/2"			VENT		
N3	1	2"			DRAIN		
N2	1	2"			LIQUID OUTLET		
N1	1	2"		ANSI 150# RF	LIQUID INLET		

NOTES

1. SURFACE PREPARATION [illegible] BLAST NEAR WHITE
2. PAINTING
   1) [illegible] ETHYL SILICATE INORGANIC ZINC [illegible] 2½" MILS.
   2) [illegible] EPOXY HIGH BUILD ENAMEL [illegible] 5" MILS. (BY OTHERS)
   * REFER TO SPEC. 9211-100-100-20.
3. INTERIOR PAINT : AWWA EPOXY ONLY.
4. FIELD [illegible] TEST. DE[illegible] FUTURE CORRODED CO

MATERIAL LIST

NO.	DESCRIPTION	MAT'L	Q'TY	SIZE
9	FIRE PROOFING CLIP	A283-C	16	PL 3×10×22
8	ANCHOR BOLT	A307	3	3/4"-10UNC×720ℓ
7	GRAB RUNGS	A36	3	RB-Φ32
6	NAME PLATE	A240-304	1	
5	EARTH LUG	A240-304		PL 6×70×100
4-2	BRACKET	A283-C		PL 13
4-1	LIFTING LUG	A283-C	2	PL [illegible]×200×330
4	LIFTING LUG			
3-4	BASE PLATE	A283-C	3	PL 12×[illegible]×130
3-3	LEG [illegible]	A283-C	3	[illegible]
3-2	LEG [illegible]	A515-55		[illegible]
3-1	LEG SUPPORT	A36		
3	LEG			[illegible]
2	HEAD	A515-55	2	ID 1000
1	SHELL	[illegible]	1	[illegible]

REVISIONS

NO.	DESCRIPTION	DATE		
2	REVISED BY AIOC	[illegible]		
1	REVISED BY AIOC COMMENT	[illegible]		
0	ISSUED FOR APPROVAL	[illegible]		

[illegible] ENGINEERING [illegible]

TITLE OF PROJECT

[illegible] SUEZ [illegible]

[illegible] EGYPT

KOREA HEAVY INDUSTRIES & CONSTRUCTION CO., LTD.

D.K. Lee 81.9.16

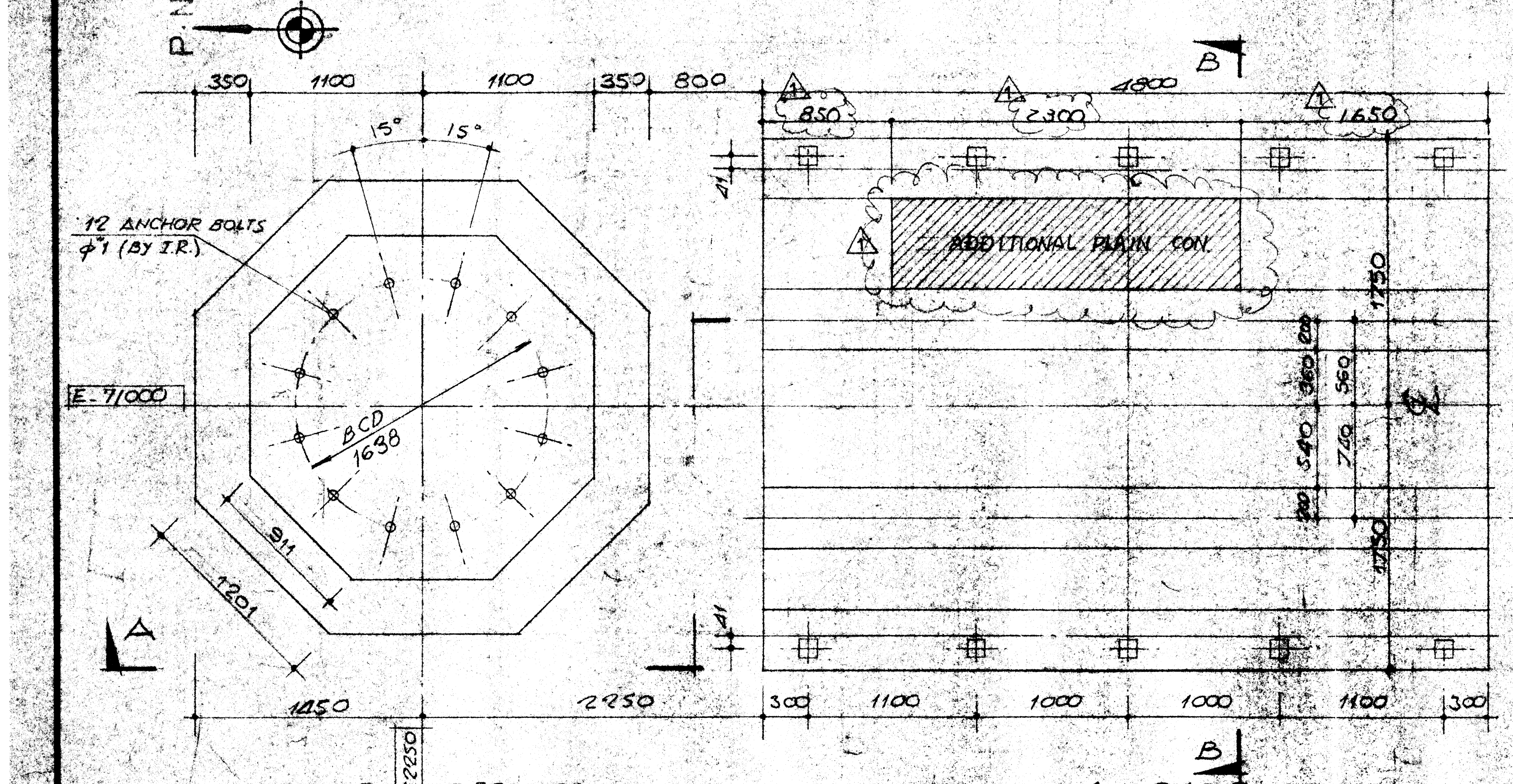
YK SUN 81.9.15

DRAWN

ITEM NO. 3-V-14

ASSEMBLY & DETAIL

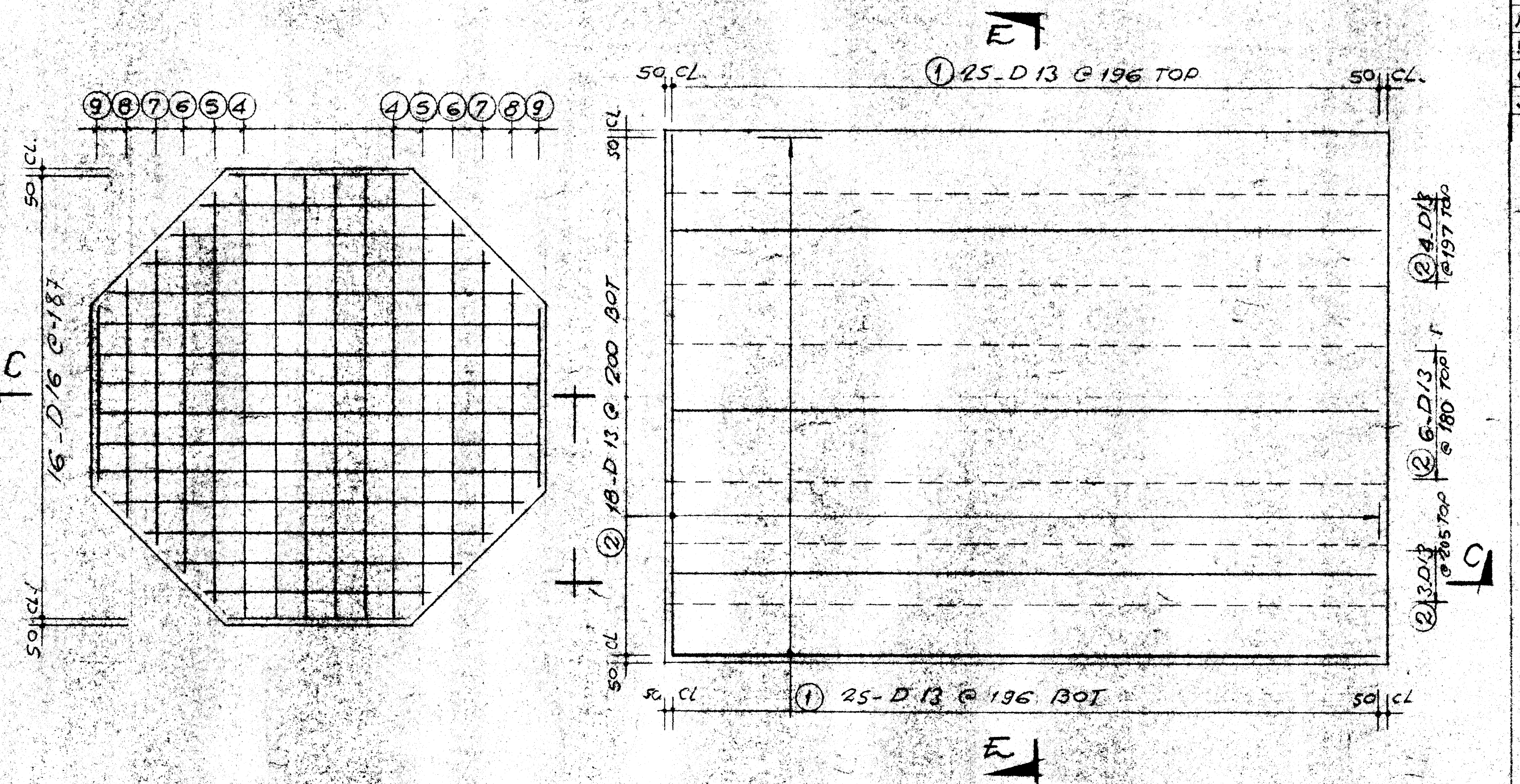
POTABLE WATER SURGE DRUM



AIR RECEIVER

4_C106

FORMWORK PLAN

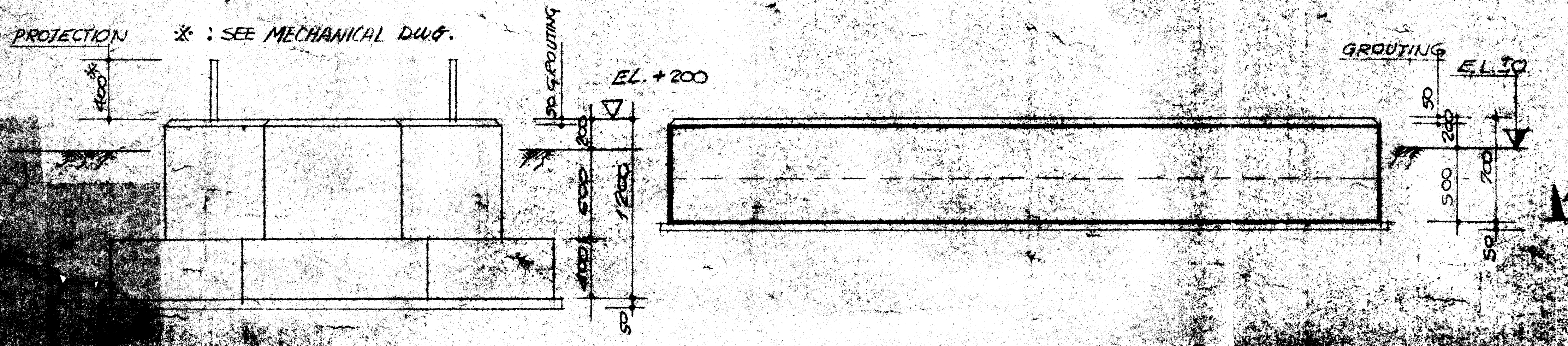


REINFORCEMENT PLAN

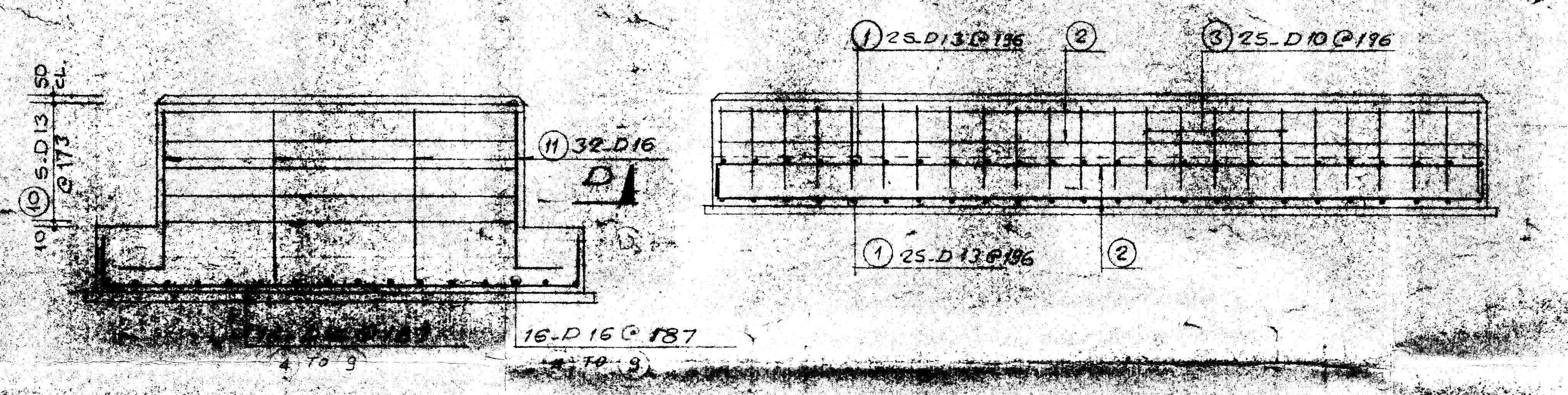
1/30

NOTE:
ALL DIMENSIONS ARE IN M.M

APPROVED
DATE

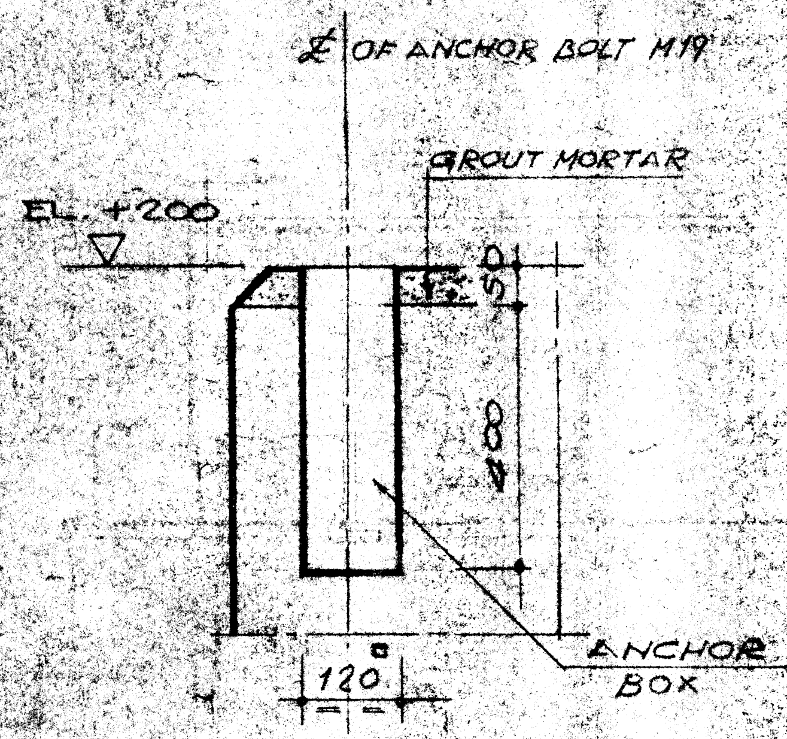


SECTION A-A

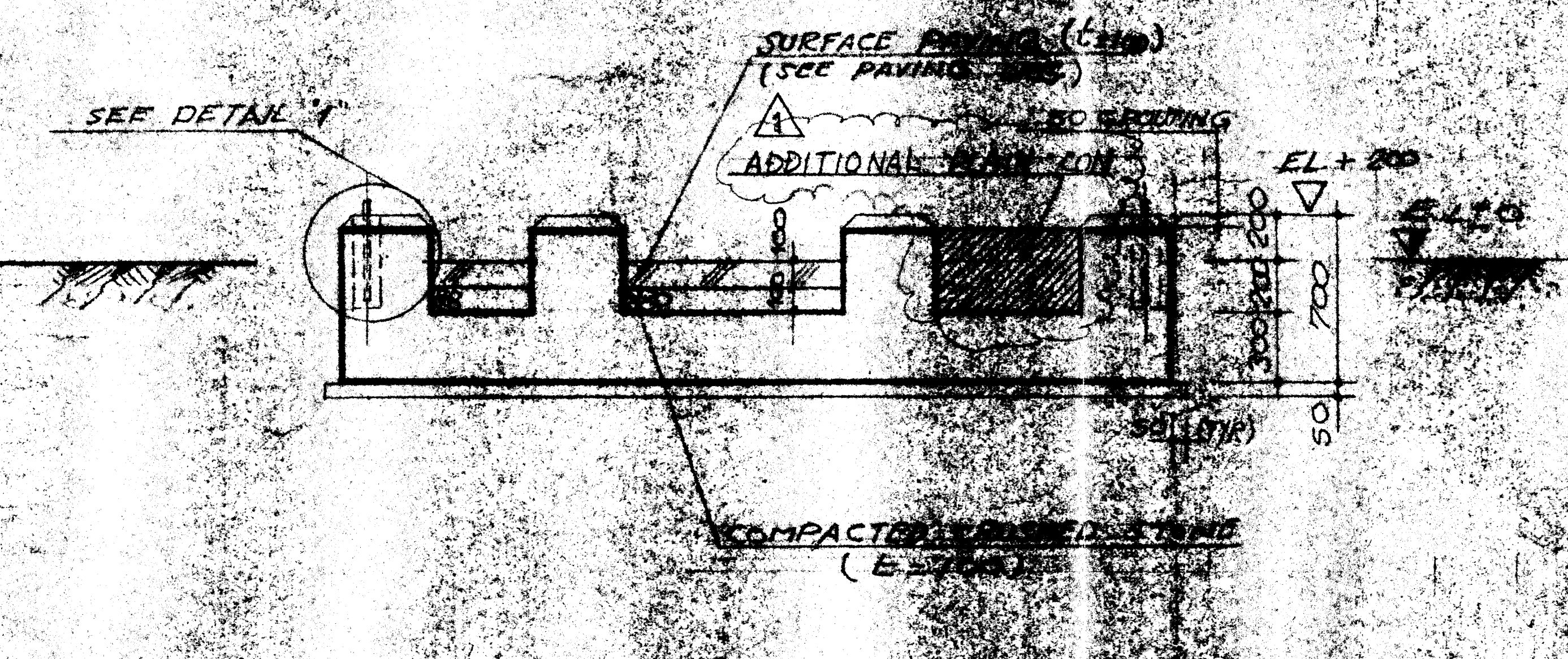


SECTION C-C

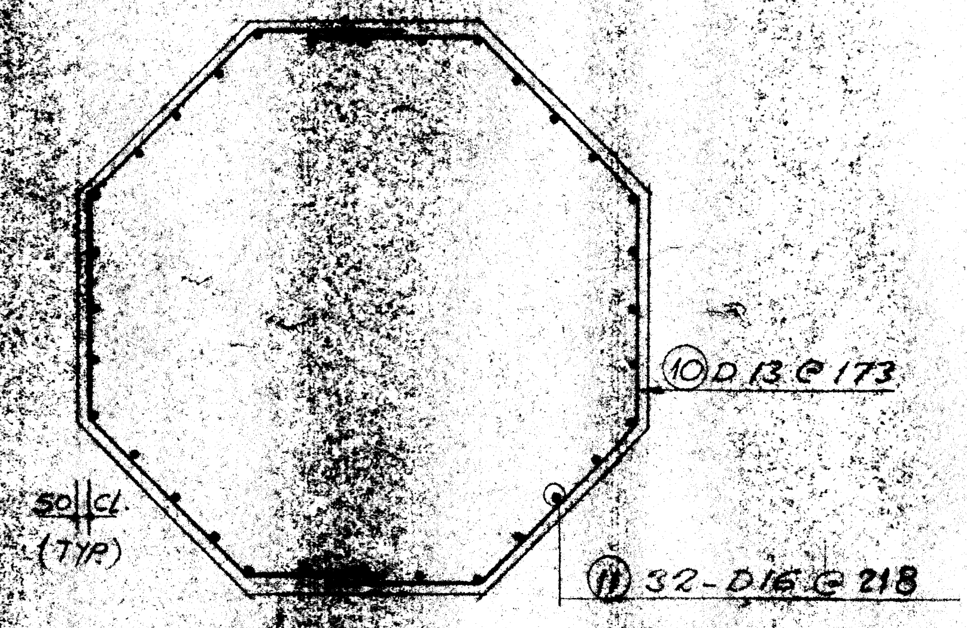
1/30



DETAIL 1

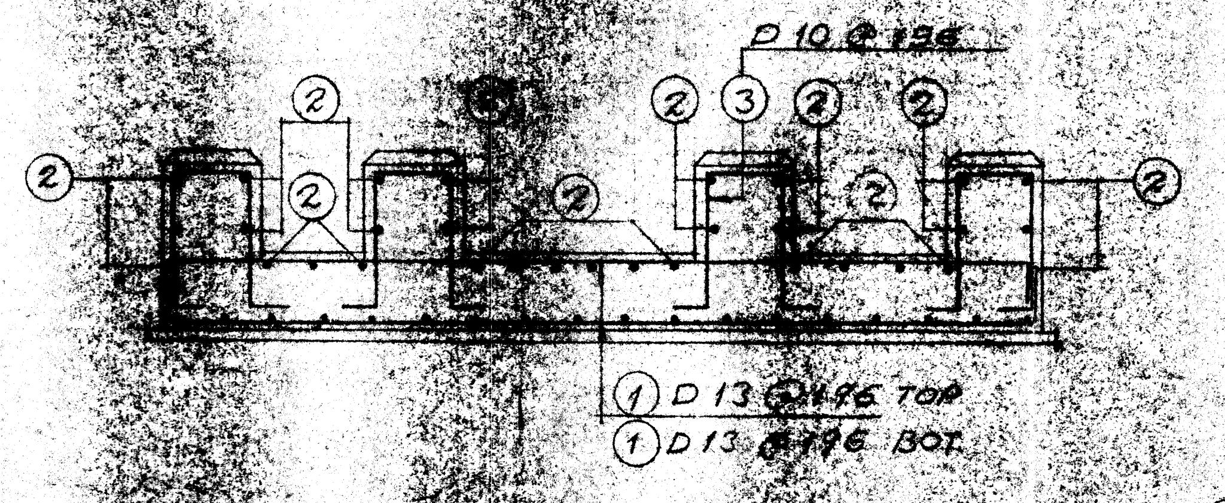


SECTION B-B



SECTION D-D

1/30



SECTION E-E

1/30

REFERENCE DRAWINGS		
NAME OF DRAWINGS	SHEET No.	RE
FOUND. LOCATION PLAN	GOS-AC-1400-53.011	
CONCRETE SPECS.	GOS-AC-20-006	
CONCRETE ACC.	GOS-AC-20-010	
SHIM & GROUTING	GOS-AC-20-007	

NOTES
A...MARK OF REINFORCEMENT.
B...DIAMETER OF REINFORCEMENT.
C...PITCH.
D...STRAIGHTENED LENGTH OF REINFORC
E...NUMBER OF REINFORCEMENT PER ELEM
F...NUMBER OF ELEMENT.
G...TOTAL NUMBER OF REINFORCEMENT
H...FIGURE.

LIST OF MATERIALS

DESCRIPTION	UNIT	QUANTITY	RE
REINFORCED CONC.	M 3	13.51	
LEVELLING CONC.	M 2	25.09	
FORMWORK	M 2	28.76	
EXCAVATION	M 3	17.53	
BACK FILLING	M 3	4.51	
BAR D-10	KG.	97.44	
BAR D-13	KG.	476.61	
BAR D-16	KG.	206.55	

ISSUE	DESCRIPTION	DATE	CHKD
4			
3			
2			
1	REVISED AS NOTED	AUG 21 '87	N.H.
0	ISSUED FOR APPROVAL	APRIL 2 86	Osuna

0[illegible]1401 EGPC
GULF OF SUEZ GAS PLANT PHASE
FOUNDATION DETAILS FO
4 C106 & AIR RECEIVER (4X 1C
(SCALE) 1/3
Hitachi Zosen
CIVIL ENGINEERING DEPARTMENT
OSAKA, JAPAN
(DRAWN BY) SK
(CHECKED BY) Osun
DATE APR. 2/86
RELATED SECTION
DWG No. 2465377
SHEET No. GOS-AC-1400-53

BAR BENDING SCHEDULE

ITEM	A	B	C	D	E	F	G	H
4C106 COMPRESSOR UNIT	①	13	196	3800	50	1	50	3400
	②	13	SEE PLAN	5100	49	1	49	4700
	③	10	196	1740	100	1	100	[illegible]

ITEM	A	B	C	D	E	F	G	H
[illegible]	④	16	187	3400	12	1	12	2800
	⑤	16	—	3250	4	1	4	2650
	⑥	16	—	2875	4	1	4	2275
	⑦	16	—	2500	4	1	4	1900
	⑧	16	—	2125	4	1	4	1525
	⑨	16	—	1750	4	1	4	1150
	⑩	13	173	[illegible]	10	1	10	650
	⑪	16	218	[illegible]	32	1	32	300